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[*For continuation of "Analysis of Advertisements" see page* xcv.]

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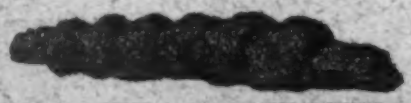

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THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXVI.—No. 4227. FEBRUARY 8, 1924.

THE LABOUR GOVERNMENT AND HOUSING.

THE entry of Labour into office has provided the most striking political event of our time, and among the changes which we may consider probable not a few seem likely to affect the building industry and those to whom this industry looks for finances for building projects, and direction in design. Labour has had many sarcastic words for Whitehall in the past, and it will be interesting to see whether the administrative machine will work with greater individual initiative and elasticity under Ministers less imbued with traditions of officialism than their predecessors. While we shall welcome such changes based on sound common sense, we imagine that the new heads of departments will find that changes are not simple matters, but involve a great number of considerations and points of contact with other departments of which they have yet to learn a good deal from their permanent officials. At the same time, we hope that these officials will assist that spirit of progress and economy in organisation which is just now so essential for the re-establishment of our trade, upon which the material prosperity of the country depends. After trade depression, building revival must always wait upon some accumulation of bank balances; hence, at best, prosperity in this trade is not certain to be immediate.

The new Minister of Health (Mr. Wheatley) has lost no time in displaying his interest in one of the chief Government "planks," namely, housing, and his experience and relations with labour should make him well fitted to tackle his difficult problem; further, his method of assault should be essentially different from that of his forerunners. We want no repetition of the programme initiated by the Government after the war. We were consistently against that scheme of State building with its cumbrous officialism by persons devoid of any knowledge of trade methods, and its disastrous attempt to make a corner in building materials for public benefit under the D.B.M.S. is too recent to require review. The policy of private enterprise is considered by many students of the subject to be the only one which can ever succeed in a matter of this magnitude; but success even in this direction would depend upon many factors. Mr. Wheatley, speaking last week at Glasgow, had some very plain things to say about housing conditions at the present time which we entirely endorse; nothing, anyhow in adolescence, can tend to foster crime, immorality, poor physique, and discontent, as much as insufficient and insanitary housing, and the advent of labour to power gives this matter greatly increased importance, for we may in our slums be warping the judgment and enfeebling the health of those who will, later on, guide the destinies of the nation. The Minister recognised the difficulties, which he classed under finance, labour, and materials. At the present time it is hardly possible to obtain a small house except by purchase, apart from the few opportunities which occur to those on the waiting lists of the promoters of housing schemes. The present building subsidy offers some assistance, but we think that simplified borrowing facilities for individual prospective occupiers on the security of their houses might prove a better means of financing schemes than grants in other directions. These facilities, as a matter of business, should be based partly on the construction of the house, which could be reported upon by an architect or surveyor. This would do much to check the poor construction of many new dwellings into which people often put their life's savings, only to find that the cost of repairs becomes in a few years prohibitive. Nothing is likely to uplift the masses as much as individual ownership, and should it be possible to bring this about on a large scale it is worth a campaign carefully arranged to be within the understanding of the most ignorant.

As to labour, we give the most hearty welcome to its decision, quoted in the Press last week, to co-operate with Mr. Wheatley on the subject of increasing the number of operatives. With this attitude on the subject of dilution of labour before us we are anxious to avoid any suggestion of reproaching labour for its past attitude, but it has been undoubtedly the case that the shortage in certain trades has resulted in payment beyond the standard rates, which has caused grave loss to contractors and must reflect on building prices, with the inevitable result of taking us back to the *impasse* which occurred in the Government housing scheme under Dr. Addison. Any repetition of this state of things, though it might for a time bring increased pay to a few, would finally result in stagnation and unemployment owing to high prices. What we have often said before we repeat—there is work for years awaiting the trade, and if the operatives open their doors they will not only be helping their fellows and the public, but in the end themselves. One point we should like to refer to, namely, the request by the operatives for some assurance as to continuity of work. While we feel a good deal of sympathy with those engaged in an occupation which is more or less seasonal, and hope that some steps will be taken to meet this request, we would ask the operatives not to press this matter too much. Few of us have any real guarantee of permanency in our occupations; certainly the professional man, the trader, and their dependents have, as a rule, none. Such guarantees carried out to any extent would much tend to stifle initiative, by which alone we rise and succeed, and none of us wishes to carry on his shoulders the burden of the idle and inefficient, who would be encouraged by too generous a form of guaranteed employment. Pensions and assistance for those willing but unable to carry on life's duties come in another category.

Now that dilution is definitely to be considered, we would remind those who are likely to benefit by inclusion in such a scheme of the facilities which exist for obtaining some knowledge of the various building trades in our many technical schools and institutions, and we suggest that skilled operatives should be appointed in various centres to give these men some preliminary "field" knowledge and acquaint them with the customs which will enable them to work happily with those who have served the recognised apprenticeship. That this new attitude on the part of the operatives will be acclaimed by everyone we have no doubt, and we regard it as one of the most encouraging events in connection with housing which has yet occurred. Finally, materials will call for Mr. Wheatley's consideration. There will no doubt be a strong upward tendency in prices when any large scheme of house building develops, and the Government has already made its voice heard on this subject. The best way to prevent increased costs is to stimulate production, in which matter those responsible for transport can assist very greatly. For a long time rail costs for heavy goods have been a menace to trade revival, and we hope that the new Minister, to whom we wish every success in his great undertaking, will confer with his colleague, the Minister of Transport, on this method of stimulating production.

NOTES.

A Bargain. WILL architects view with pleasure the arrangements now made by a certain Town Council for the purchase of standard cottage designs from their surveyor at five guineas per set and the sale of copies at two guineas a set to prospective builders? If they are very good designs it will be quite cheap art. Architects will hardly be eager to enter into competition with this kind of enterprise, but it does look like a quite profitable affair for the Council.

The Fine Arts Commission. As one might have expected, the appointment of a Fine Arts Commission has led to much criticism, a good deal of which may be discounted. And, considering the results of the Fine Arts Commission in New York, it is hardly wise to condemn quickly and hotly the establishment of such a body. Naturally the composition of the Commission will not please everybody, and it is just as unfair to focus criticism too violently on the attainments of its members as it is to allow no preacher to preach because he does not in himself sum up all the virtues. There is, however, something to the point in the letter we publish to-day from the British Confederation of Arts. We have too many loose ends in our activities for reform, and a closer union of all those bodies which are working for the better understanding and use of art is much to be desired. There are infinite degrees of beauty and refinement amongst all workers in the arts, and most folk are unfortunately content with a low standard of quality in our coinage, our street lamps, our railway stations, our tea cups, our processional displays, our river banks, our telephone kiosks, our beer mugs, our commercial buildings, and all the things we have to use and look at every day. No commission can insist on the betterment of all these things, and perhaps it is as well it should not have the power to do so, but the mere fact of a Fine Arts Commission being appointed should count for good. It certainly should be composed of the soundest intelligence, the broadest sympathy, the keenest vision, and the loftiest ideality we can command. If it is not representative of the best we have amongst us it is handicapped from the beginning.

Density in Glasgow. MR. JAMES STEWART, Under Secretary of Health for Scotland, is reported to have informed the Glasgow authorities that they would not be allowed to build houses in excess of 24 to the acre. It appears that the authorities, in clearing slum areas, proposed building at 48 to the acre. This exactly illustrates what we have constantly urged—that the refusal of the late Government to limit the number of houses to the acre was disastrous folly. If the report is correct and Glasgow really intended to build 48 *houses* to the acre we can only stand amazed, but if the intention was to build 48 *tenements* to the acre we would refer the authorities to the findings of the Royal Commission on the Housing of the Industrial Population of Scotland, Rural and Urban (1911), in which it is emphasised that not more than 32 tenements, to be of three stories, should be built to the acre and that this recommendation should be embodied without delay in an Act of Parliament. What a farce it is! Royal Commissions sit and collect evidence for months. For months the best brains available sift the evidence and produce a comprehensive scheme for future guidance. The Government of the day then acts as if the Commission had never existed. That is the usual procedure, and we hope that the new Government will break the tradition.

Cross Traffic Improvements. WE have heard it said that the average successful grocer manages his affairs with more foresight than does a great community of citizens. But London is so vast a congregation of humanity, with interests so varied and often conflicting, that no dominant controlling force has been found yet to work for the common good. We find this difficulty put forward on Tuesday by a writer in the *Morning Post*, who says our difficulty is that where other nations bite we only nibble, or else we might create underground subways to provide for great streams of cross traffic. He instances the terrible aggregate of wasted time at such a point as Oxford-circus, which would be obviated by a "dive" which could be made at a comparatively small cost and without affecting superficial conditions. Abolish horses and improve cross traffic, says the writer. "If we go on for another fifty years without doing either, it will be because what we call the London traffic problem represents the thwarted ideal of the hustler rather than the crying need of the public as a whole."

Town Planning. How many educated men, if they were asked in a general knowledge paper to define "Town Planning," could do so even in the vaguest manner? Nine out of ten would say it meant putting up some kind of building or erecting garden suburbs; one might go

British Empire Exhibition: Newfoundland Building.

MESSRS. J. W. SIMPSON & MAXWELL AYRTON, FF.R.I.B.A., Architects.

further and say that a large percentage of those in office on local authorities, builders, and even architects, would be found wanting in an elementary understanding of what is to become one of our greatest practical sciences of the future. The Ministry of Health, having suffered much from the ignorance of earnest inquirers, has issued a pamphlet on this subject, and we recommend those of our readers who would fail in the general knowledge question to study this explanatory pamphlet.

The Subject and the Method. THERE is a significance not to be missed in the appearance of a work on "Britain Beautiful." We welcome all such publications and we imagine the appeal will prove irresistible to thousands. Though much might be offered in criticism as to the mechanical methods employed, everyone may be something the richer and better informed from acquaintance with a publication which illustrates so many of the treasures of our wonderful little island, which are practically inexhaustible. Architecture and landscape appear to come in for a fairly equal share of attention; but what a series of books illustrative of the best aspects of our land and its building might be published! The cost would be prodigious and the public might not value it at its true worth, but it requires little imagination to visualise the charm of a publication on such a subject if dealt with sympathetically by the scores of able artists in the world to-day who are now only half employed. It would, perhaps, need the enterprise and vision of an American business man to tackle such a vast and wonderful subject.

Classic Tradition. "DESPITE our temporary infidelities, we are still men of the Renaissance," says a writer in *House and Garden*. Well, our lives are certainly pretty well salted with infidelities to-day, but the main concern of those who want beautiful building should be to find a something which is not necessarily bound up with a style or a tradition, or to seek a feeling for fine proportion and distinction of line, mass, and detail as our main concern, and then the battle of styles will be a matter of secondary importance. We may note, by the way, that those who call most loudly for a free hand as regards all styles and traditions give us little or nothing themselves to justify that freedom.

A Unique Church Window. FEW parish churches in England have escaped the pious memorials of the Victorian era, and since the principle of safety-first rightly conserves the bad with the good, we must accept the continued prospect of acres of crude magenta, bog green, Reckit's blue, and gamboge illustrating scenes from the Old Testament in ill-leaded stained glass, until time, extending beyond our generation, may lend a mellowing influence. Mercifully only a small proportion of such artistic outrages are to be found in English churches, but in Ireland, where practically all ecclesiastical architecture is nineteenth-century work, these witnesses to devout grandeur persist. And yet it is in an Irish church overlooking Glengariff Bay that a notable exception may be seen. One of the Ladies Bantry inserted there a clear plate-glass window, at a date when magenta was reserved for churches, and plate glass for noblemen's mansions. Under this window, from whence the blue bay and purple hills can be seen receding into the distance, are engraved the words: "*The Heavens declare the Glory of God and the Firmament showeth His Handiwork.*" As a lasting tribute to good taste this memorial is probably unique.

How Buildings are Spoiled: Bush House, from the Refuge in Kingsway.

The Roubiliac Models. THE three models by Roubiliac, an eighteenth-century sculptor, found in the Triforium at Westminster Abbey have the interest which attaches to the character of such a find—which is not great. This is one of those cases in which the old is not necessarily good, and these models, so florid, pompous and artificial in their character, have but little interest artistically. In fact, it would not be too much to say that both in design and character they represent everything that is most artificial, and, therefore, undesirable in the art of the sculptor. We may feel sorry for the troubles which surrounded Roubiliac, but he was the sycophant of a court, waiting on greatness and lending his genius to the soul of fashionable tableau art, which appealed by its pseudo-magnificence to the courtesan and the courtier, but was offensive to anything better. And the discovery of these models, though interesting as a record of the time, have little other interest to recommend them.

Individualism in Church Monuments. THERE has been a great improvement in the private memorials we see erected in our parish churches and elsewhere, but it would be an admirable practice for the Church Council or authorities to keep a list, prepared by the architect, of accessories still required in a church or chapel, and which a giver could consult without further responsibility in the choice of design. This plan has been admirably executed in the Sandhurst College Memorial Chapel, and in connection with it one can only pass a single comment—that it might have been better if the names of individual donors and of those whom they wish to remember had been inscribed in a special book of commemoration instead of being lettered on some adjacent column, apparently promiscuously, but intended to imply that a lamp, lectern, or crucifix near by had been presented in special memory. The beautiful lettered panels of the various regiments are a sufficient roll of honour, without these extra individual intrusions, however well executed, and they somewhat lessen the poignancy of the memorial as a corporate witness.

GENERAL NEWS.

Management of Landed Estates.

Mr. A. J. Burrows, F.S.I., F.A.I., gave the first of a series of two lectures on the subject of the "Management of Landed Estates" at the College of Estate Management on Friday last week. At the commencement of his lecture Mr. Burrows dealt with the necessary qualifications of a land agent, and then passed on to describe a typical estate and the work to be done thereon, such as the letting and the management of farms, small holdings and allotments. The lecturer also dealt with repairs and discussed the best system of carrying these out. He also went very fully into the question of the various kinds of improvements to be done to an estate such as the provision of new buildings, drainage and fruit planting. In conclusion the lecturer dealt with outgoings, and the rates and taxes with which it would be the duty of the land agent to deal.

Architect's Estate.

William Hawley Lloyd, of Leamington Priors, formerly of Birmingham, architect, who made contingent bequests to the Church Missionary Society for Africa, the Royal Midland Counties Home for Incurables and the Church Pastoral Aid Society, left estate value £32,912.

R.I.B.A. Visiting Board.

The Council of the R.I.B.A. on the recommendation of the Board of Architectural Education have approved the creation of a Visiting Board to visit and report upon all Schools of Architecture applying for or enjoying exemption from the Royal Institute Examinations. The following have been appointed to constitute the Visiting Board:—

Mr. Paul Waterhouse, Mr. W. Curtis Green (Chairman of the Board of Architectural Education), Mr. Maurice E. Webb (Vice-Chairman of the Board of Architectural Education), Professor C. H. Reilly, O.B.E. (Roscoe Professor of Architecture, University of Liverpool). H.M. Inspector, Mr. M. S. Briggs, will accompany the Visiting Board upon their visits to those Schools of Architecture which have official relations with H.M. Board of Education.

Town-Planning Regulations.

A Supplement embodying amendments of, and additions to, the Model Clauses for use in the Preparation of Town-Planning Schemes has been issued by the Ministry of Health. (London: H.M. Stationery Office; price 9d. net). The Supplement relates to the regulation of streets under town-planning schemes and by-laws; revision of standard specifications for street works; approval of orders by the Minister of Health; power to reserve land for streets not shown on the map; leave of Minister to be obtained before appealing; and minor amendments.

Obituary.

Mr. C. W. Reeves, A.R.I.B.A., died at Charing Cross Hospital on January 15, 1924, aged 70 years. On the previous Saturday he was knocked down by a taxicab when crossing Wellington-street, Strand, and received such severe injuries that from the first there was no prospect of his recovery.

The son of the Surveyor to the Metropolitan Police, he was articled to the late Mr. H. O. Chislett, of Wimborne, and then came to London where, for a few years, he was an assistant in the office of Messrs. E. Habershon & Brock, whom he left to commence practice upon his own account. For a short time he was at 102, Guildford-street, and at 25, Bedford-row, and in 1884 he removed to 3, Gray's Inn-square, where he had practised ever since.

Mr. Reeves was surveyor to the Masters of the Bench of the Honourable Society of Gray's Inn, architect to the Managers and Governors of the St. Clement Danes Holborn Estate Charity, surveyor to the Rhodes Trust, and surveyor to several building societies.

He was well known as a capable and practical surveyor in party wall matters, ancient light cases, dilapidations and all matters appertaining to a surveyor's practice.

Mr. Reeves carried out a fair amount of architectural work, amongst which may be mentioned the following:—

Considerable alterations and additions to the War Memorial Hospital, Enfield; large bottling stores and warehouses for Messrs. Robert Porter & Co., in London and Liverpool; London Central Cold Storage; new Common Room and Class Rooms, Gray's Inn; new premises for Messrs. Ridgway's, Ltd., at 40–42, King William-street, E.C. (both the foregoing were exhibited at the Royal Academy); nurses' hostel in Francis-street, W.; parish room, Lady Chapel and memorial screen at St. Mary Magdalene, Enfield; St. Clement Danes Schools, Drury-lane; and numerous private houses at Enfield, Sunningdale, Waltham St. Lawrence and Purley.

In 1914 Mr. Reeves took his son, Mr. Charles W. Reeves, into partnership, and in 1921 Mr. Alfred R. Rason, who had been with him for nearly forty years, the firm being known as Reeves, Son & Rason.

Mr. Reeves was elected Associate in 1880.

CHURCH OF ST. JULIEN, BRIOUDE. (*See p.* 211.)

COMPETITION NEWS

Masonic Peace Memorial.

The following report of the Special Committee has been approved by Grand Lodge:—

"It is proposed to issue an invitation to architects to submit designs and plans for the new building in competition. This competition is to be open to all architects, and to be conducted in two stages; a first or sketch competition, and a second or final competition. Not fewer than ten designs will be selected from those submitted in the first competition, and of these a further selection will be made of six designs, the authors of which will be invited to submit detailed plans and designs in the second or final competition. Each of the six architects submitting a *bona-fide* design in the final competition will receive an honorarium of 300 guineas. Three assessors will be appointed: an architect, to be nominated by the President of the Royal Institute of British Architects; an architect who is a Freemason, to be nominated by the Special Committee; and the Grand Superintendent of Works for the time being. The conditions governing both competitions will be in accordance with the Regulations of the Royal Institute of British Architects for Architectural Competitions.

"It is proposed to treat the whole of the property of Grand Lodge, being the area bounded by Middle-yard, Great Queen-street, Wild-street, and Wild-court, including the sites of Mark Masons' Hall, the Connaught Rooms, Freemasons' Hall, and the properties between Freemasons' Hall and Wild-street as a cleared site. The designs to be submitted in competition will provide for a building to cover eventually the whole of this land.

"It is intended first to provide and complete on the site between Wild-street and Freemasons' Hall the new Temple and such accommodation as will replace as far as possible that existing in the present Freemasons' Hall, thus limiting to a minimum the disturbance of the executive and other work now carried on in that building.

"The new building will contain:—(1) A large temple with seating capacity for 2,000 persons, with separate cloak rooms and lavatory accommodation, registration hall, and vestibules and scrutineers' room; (2) administrative offices adequate to the growing needs of the craft, including a suite of rooms for the Grand Secretary and Assistant Grand Secretary, with rooms for personal clerks, and waiting rooms, a general staff clerks' office, register room, muniment rooms, and board and committee rooms, with all necessary conveniences; (3) the needed increased accommodation for the Grand Master, Grand Officers, and Past Grand Officers; (4) a suite of large rooms for the use of London, provincial, district and other visitors, to include a reading and writing room, smoking room, three conference rooms, a locker room, lavatories with dressing rooms, bathrooms, and the like; (5) a library and a museum, with librarian's rooms and strong room; (6) not fewer than fifteen Lodge and Chapter rooms, varying in size from a room to hold 600 for meetings of Grand Chapter, and the Great Masonic Assemblies, and rooms for large Lodges with attendances of from 150 to 400, to small rooms suitable for attendances of 30 to 50; all these will have ante-rooms with separate candidates' rooms; (7) store-rooms adjacent to each Lodge room, where books, records and other Lodge property may be kept for the convenience of Lodges.

"That part of the building containing the Lodge rooms and store-rooms is to be so designed structurally as to allow of the addition of further floors of Lodge rooms in the future as occasion may require."

Royal Masonic Institution for Boys: Junior School, Bushey, Herts.

The drawings submitted by architects in the limited competition for a Junior School for Boys at Bushey, Herts, will be on exhibition in the board-room at the offices of the Institution, 26, Great Queen-street, W.C.2, between the hours of 10 o'clock and 5 o'clock from February 18 to 22. Members of the profession will be admitted on presentation of their cards.

Port Talbot.

The premium of £20 offered by the Borough of Port Talbot for the best design for entrance gates for the Talbot Memorial Park has been awarded to Mrs. Morris Gray, of Penrith.

Edmonton War Memorial.

The Council has accepted the design of Messrs. William Griffiths & Co., Ltd., London, for this competition.

Ashton-under-Lyne.

The design and tender of Messrs. Johnson's Reinforced Concrete Engineering Co., of Manchester, has been provisionally accepted for the bridge over the River Medlock.

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given):—Essays on Heating and Ventilating (Mar. 31; Nov. 9, 1923). Holmside Hospital (Feb. 14; Dec. 14, 1923). Industrial Designs (June; Dec. 21, 1923). National Theatre (April 26). Monument to Sir Wilfrid Laurier (April 3; Dec. 14, 1923). Belfast Union Lighting (March; Nov. 9, 1923). Dunfermline War Memorial (March 8; Dec. 28, 1923). Newcastle Concert Hall (March 1; Oct. 26, 1923). Ross-Smith Memorial (Sept. 30; Feb. 1). Newcastle Fire Station (March 27; Feb. 1).

TOWERS AND SPIRES.

BY SIDNEY TOY, F.S.A., A.R.I.B.A.

V.—CHURCH OF ST. PAUL, ISSOIRE.

A SKILFUL method of treatment of the crossing and the tower over it was developed during the eleventh and twelfth centuries in the French province of Auvergne. Conspicuous examples of the principles adopted are afforded by the churches of Issoire, situated in the centre of the province, of St. Nectaire, St. Saturnin, Notre Dame du Port Clermont, and of Brioude. In many cases, as at St. Nectaire, Notre Dame du Port Clermont, and Brioude, the tower has been rebuilt in modern times, and probably the only church of this group which remains intact is that of St. Saturnin. This church dates from the end of the eleventh or beginning of the twelfth century. It is one of the smaller examples, but possesses the general characteristics of the type and preserves its original tower with stone spire.

The church of St. Paul at Issoire, built in the twelfth century, is the largest of this class and is typical of the work of the school, both in respect to the general plan and in the disposition of the crossing and tower. Although in the course of ages the tower has undergone minor alterations, and perhaps additions, its lower part appears to be substantially original.* At the crossing the plan of the church (Fig. 10) is disposed in a normal manner and differs little from that prevailing elsewhere at the period, but as the walls rise towards the vaults the distinctive character of the design becomes more pronounced (Fig. 11). The four arches of the crossing are carried to a considerable height and the crossing itself is covered by a dome raised sufficiently above the arches to allow space for windows below it and over the chancel roof. At the angles the dome is supported on well-designed squinch arches, and in order to restrict their span, and consequently their thrust on the walls, the dome is somewhat distorted in shape, as indicated on the plan (Fig. 10). The vaults of the north and south transepts are not continued to the walls of the tower as are those of the choir and nave, and as was usual elsewhere, but are stopped by transverse arches, thrown across between the portions A and B (Fig. 10). By means of these arches the bays of the transepts A.A., adjacent to the tower, are carried up a stage higher than the bays B.B. They are lighted by an additional clerestory and are covered by half-barrel vaults which abut against the dome over the crossing.

The advantages of this arrangement from a purely constructive point of view will be apparent on an examination of Fig. 11. The lateral pressures are received well up in the height of the tower by the half-barrel vaults of the transepts and are spread over the full extent of the building north and south. The vault of the nave is carried up to a greater height than that of the choir and abuts against the squinch arches, so that practically the whole of the pressure of the tower is converted into a dead-weight, which is in itself sufficient to neutralise the lower thrusts of the dome, and is carried by the four great pillars of the crossing. Æsthetically, also, the improvement is very considerable. By means of the windows in the additional clerestory of the transept, and of those immediately below the dome, the crossing of an otherwise sombre church is flooded by an agreeable light. In order that the walls above the great arches should not impede the circulation of light they are pierced with arcades, as seen in Fig. 11.

The external effect of this method of construction is well seen in Fig. 12, a photograph from the south-east of the church. By this manner of piling up the central portion of the structure tier on tier in diminishing stages and culminating in the tower the building acquires a dignity and repose which are most striking. The break between the upper clerestory and the tower is a little abrupt, due doubtless to alterations, and the present low timber spire somewhat detracts from the effect. But the original design, if one may infer from the analogy of the early work at St. Saturnin, and if carried out, would have produced a most inspiring structure. The stone spire of the church of St. Saturnin springs directly from the top of the walls of the tower.

* M. Viollet-le-Duc, in his "Histoire de l'architecture," Vol. IX, p. 220, says that the upper part of this tower has been disfigured and deprived of much of its primitive grace. But the drawing he gives, *op. cit.* p. 219, presumably embodying his conception of the original or intended condition of the structure, is widely conjectural and not very convincing.

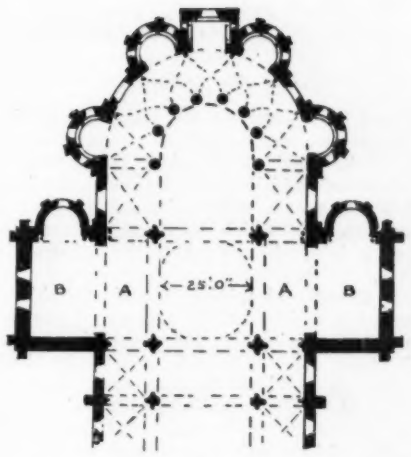


FIG. 10.—PLAN OF ST. PAUL'S, ISSOIRE.

Building Costs in London.

Answering a question at the London County Council as to the cost of the smallest type of house now being built by the Council, Lieut.-Colonel Levita said that the cost of a three-roomed house, including roads and sewers, on the Council's estate, was £510, and the lowest remunerative weekly rent was 13s. 6d. per week, exclusive of rates. The actual rent charged was 9s. 6d. a week, exclusive of rates.

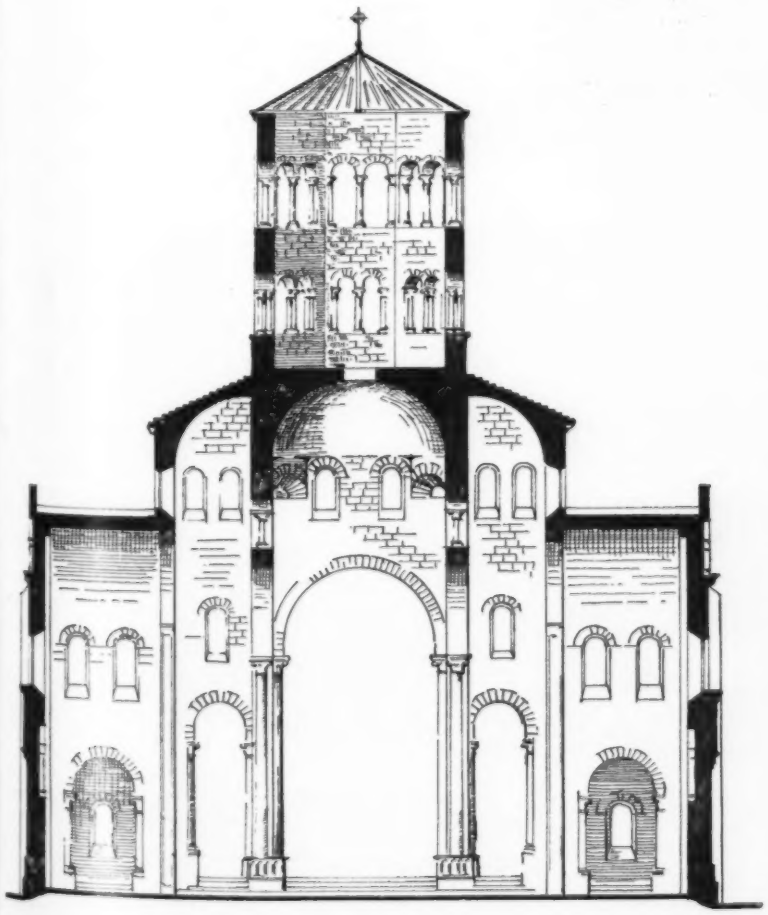


FIG. 11.—CHURCH OF ST. PAUL, ISSOIRE: SECTION THROUGH TRANSEPT.

FIG. 12.—CHURCH OF ST. PAUL, ISSOIRE.

CORRESPONDENCE.

Posters and Advertising.

SIR,—I have noted in the Press of late that an important conference of advertisers is soon to be held in London, the American organisers of which state "that advertising in this country is still in its infancy"; in consequence of which a huge advertising campaign is to be launched throughout the country.

I am strongly of opinion that should this be successful it will be at the expense of our few treasured possessions in the way of landscape, architecture, &c. I, for one, certainly think that already we have far too many posters, and that the ever-increasing electric sky signs of the West-end are "vulgar and inartistic" at night, whilst their appearance during the day, "sprawling right across architectural refinements" which are the product of years of study, is greatly to be deplored.

If, on the other hand, the advertisers really wish to improve English advertising, why not encourage really artistic posters, and in lieu of our present garish night signs "flood light" the buildings as a few West-end firms have done?

I feel sure that if the conference follows something on these lines it will achieve success, produce a "Brighter London," and at the same time encourage an appreciation of architecture, which appears to be sadly lacking in this country at the present moment.

SIDNEY H. LOWETH, A.R.I.B.A.

London.

Estimating.

SIR,—Being interested in the subject of estimating, I read Mr. Sumner Smith's paper on the "Principles and Practice of Estimating," published in your issue of the 18th ult. I regret that his remarks did not add to my knowledge.

I quite agree that, as far as possible, estimating should be done on scientific lines. The cost of a yard cube of concrete, however, may be obtained with accuracy without entering into elaborate calculations as to voids. Writing as one with practical experience in the matter, I do not hesitate to say that the only safe method of obtaining the exact amount of material in concrete to a definite specification is by an actual test. The method which I use is as follows:—

I obtain samples of the materials proposed to be used and weigh measured quantities of each, thus obtaining their respective weights per yard cube. This information is most essential as one usually buys by the ton and uses by the yard cube. Supposing that the specification is four parts broken granite, two parts sand, one part cement. I then take four cube ft. of the granite, two cube ft. of sand and one cube ft. of cement, mix them in the usual manner, dry and wet, exactly as they would be done on the job. I then carefully take the measurement of the mixed concrete, after thoroughly ramming into a suitable gauge box. The volume of concrete produced is found to be about 4½ cube ft. This will vary with the different material used. This information is all we require to price out our concrete.

We will suppose that the broken granite costs 20s. per yard cube delivered on the site, the sand 10s., and the cement 80s. The price per yard cube would be obtained from the price per ton by the ascertained weights.

Now, 4 yds.	cube granite	at 20s.	= 80s.
2 „	„ sand	„ 10s.	= 20s.
1 „	„ cement	„ 80s.	= 80s.
7 „	„ mixture		= 180s.

This makes 4½ yards cube concrete. Thus the concrete material costs 38s. 7d. per yard cube, to which we add the labour. If one is continually using the same class of material to the same specification, it is convenient to evolve a formula in cwts. of the materials to the yard cube, and keep for reference.

With regard to water for the concrete, in this part of the country it is usual to pay for the water on a contract, at a rate fixed by the amount of the contract and not by the gallon.

W. S.

Burton-on-Trent.

Towers and Spires: An Appreciation.

SIR,—In the first of the above series, published on Jan. 11, the centering shown in the cross section of Salisbury spire is the first I have seen in print during the fifty two years I have been reading *The Builder*. I have looked through Wicke's, Fletcher's, and Gwilt's works on Architecture, and find it is not mentioned. In Francis Bond's book it is mentioned but not shown, but he states the thickness of stone in the spire is 9 in. at the base and 7 in. near the capstone. Perhaps Mr. Toy would oblige by stating which is the correct thickness.

EDWARD VALE.

Weston-super-Mare.

Menai Bridge.

SIR,—Your correspondent, "H. C.," appears to be in error with respect to arched bridges carried out in reinforced concrete. The largest reinforced concrete arch known to me is the Sergolomento Bridge, of 328 ft., at Rome. There are also many steel truss girder bridges in one span up to the 720 ft. span of the Metropolis Bridge in the United States, but these cases are hardly relevant to the matter.

I do not, however, doubt the practicability of building a 500 ft. concrete arch at Menai.

W. H. T.

London.

SIR,—Will you permit me to close this correspondence by saying that in the reference to "Telford's graceful structure" ought not to be read a denial of a like attraction in one of ferro concrete, and to point out that "H. C." has not answered my first letter?

A. HENTHORN STOTT.

British Confederation of Arts.

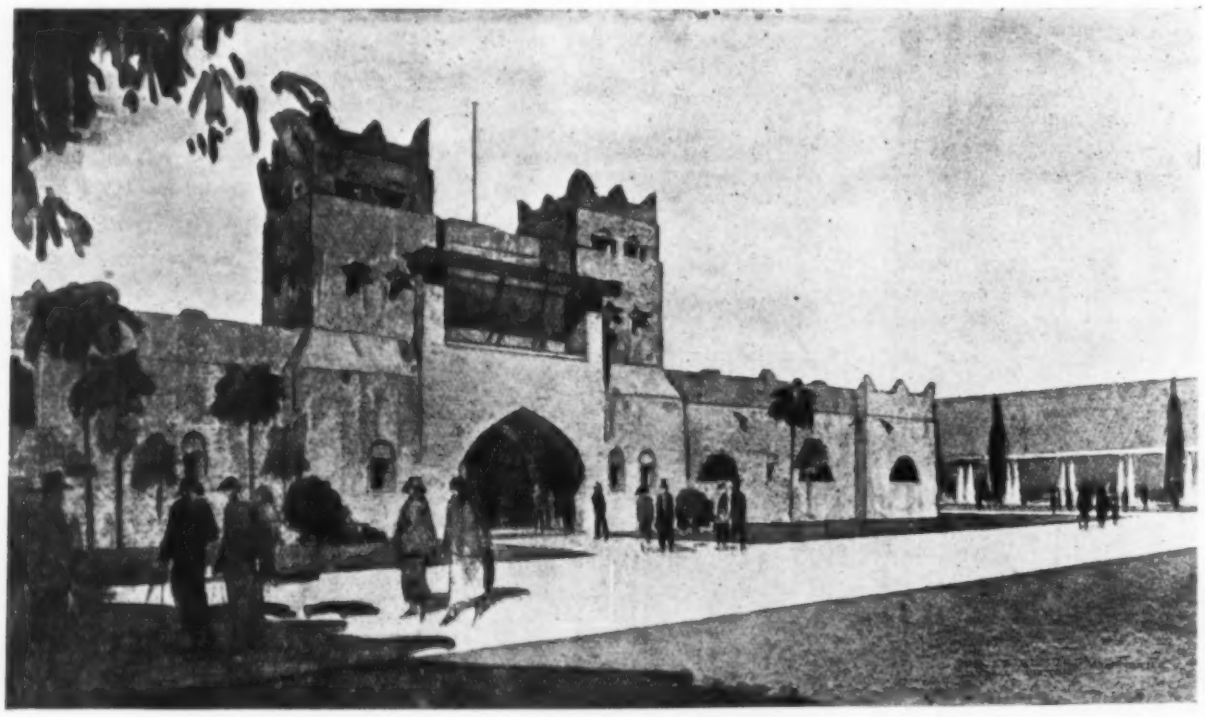
SIR,—As an organising council which aims at confederating the associations and societies of workers in the arts, we note the official setting up of a Fine Arts Commission to advise the Government and other public bodies and to "form the taste of the nation."

While agreeing that such a Commission may do valuable work, we believe that as various bodies representing the different points of view of workers in the arts in this country are in existence such bodies—through their accredited representatives—should be brought into consultation and facilities should be afforded for a more representative Commission.

We would point out that many arts are untouched by the present proposals, such as the art of the theatre, which so largely influences public tastes; the industrial arts which go to every home and without which advice cannot be adequately given with regard to interior decoration of public buildings; and arts in their educational aspect, as from schools and training colleges, which all have a most obvious influence on national tastes.

A. SEDGWICK, *Hon. Sec.*

British Confederation of Arts.



British Empire Exhibition: East Africa Building.

MESSRS. J. W. SIMPSON & MAXWELL AYRTON, FF.R.I.B.A., Architects.

MR. J. ALFRED GOTCH, President of the Royal Institute of British Architects, delivered the Annual Address to architectural students on February 4.

In the course of his address he said there were few things by which youth was more readily annoyed than by advice from its elders, those persons who had acquired so much wisdom as to have lost their enthusiasms, who were full of tediousness, and yet, like Dogberry, could find it in their heart, were they as tedious as a king, to bestow it all upon their juniors. But he would beg them, for that night at least, not to look upon him as a tedious elder, but as a student, as one student speaking to another, for he protested that he was still a student of architecture, and hoped to remain one to the end of his days.

He would like to remind them of what, no doubt, they were already fully convinced in their own hearts, that the future of English architecture lay with them. It was their duty, or shortly would be, to guide public taste into the right channels; to apply the logic of design to new methods of construction; to solve their problems with unstinted ingenuity; to maintain a high standard of conduct in the pursuit of their calling.

That reflection, divested of the delightful vain-glory proper to youth, was sufficiently sobering; but sobering though it was, it need not be paralysing. On the contrary, the thought was in the highest degree inspiring, and there was no more powerful aid to the doing of great things than inspiration. But inspiration, if it were to be fruitful, must descend upon congenial and receptive minds, and having entered it must discover, not an empty chamber, but one well equipped. It was to gain the necessary equipment that they had become students of architecture under the auspices of the Royal Institute.

When he contrasted the methods of initiation into the mysteries of their craft, which it was given to them to employ, with those vouchsafed to their forerunners, he was filled with envy and admiration. They had the help of experienced teachers; they had excellent appliances, and an inspiriting *esprit de corps*; they were able, with a sense of leisure, to devote their days through a series of years to the study of their art. But how was it in the old times? There were then no schools save that of the Royal Academy, unless they took into account a number of schools of art in which, however, architecture was not fully understood. The young architect then learnt his art in an office, supplementing it in some cases by attending classes in the evening where they were available, or snatching reluctant leave from his daily duties to attend lectures in the daytime, if they were within his reach. But these supplementary opportunities for acquiring theoretical knowledge were confined to a few very large towns, and among such opportunities stood out most conspicuously the Architectural Association. This was not the occasion to dwell on the admirable work of that institution; what was germane to the subject was that its work was done in the evening after office work was over.

It was true that among the young architects struggling to teach themselves there were a few fortunate and gifted individuals who entered the Academy School or even travelled as far as the Ecole des Beaux Arts at Paris.

The old haphazard way of learning to be an architect had been replaced by a regular course of study, but its effect on the public mind appeared not yet to have passed away; for too often they found that members of the public, and, in particular, public bodies, were under the impression that no great amount of training was necessary for an architect, that anyone whose training was remotely allied to architecture, or, for the matter of that, who had had hardly any training at all, was competent to carry out architectural work. They did not realise that in the old days the study was as severe, although not so well regulated, as it was at present.

But that there was a great deal more which went to the making of an architect than that which appeared upon the surface was sufficiently proved by the number and variety of the prizes and studentships which were offered for competition by the Institute. He was sorry to see that full advantage had not been taken of the opportunities so offered. The number of competitors had been small, and some of the work submitted had not been of merit enough to justify the award. The Essay Prize had not been awarded, nor the Pugin Studentship, nor the Grissell Medal. These prizes were for work which affected education in different directions. The essay tested the writer's knowledge of his subject and his ability to convey that knowledge in an agreeable manner; in other words, it tested his literary skill. It was a pity that some of the younger architects did not cultivate a literary style, for so few of them seemed able to rise above the level of the graces of the specification that the road to distinction in this direction was but little obstructed and seemed to invite more traffic.

The decline of the Pugin Studentship was to be deplored, for the work submitted in competition need not be specially prepared, but might be the student's own sketches made on his holidays and the outcome of his recreations.

What were the reasons for the falling-off in candidates this year? One was said to be the fact that students were so fully occupied in the work of the schools as to have no leisure for competing for the admirable prizes of the Institute. But he had heard there might be another reason: that students were impatient at the long course of study necessary to master the art of architecture as now conceived; that they had visions of a new style free from the shackles and conventions of the past; that they thought they could strike out a new line of their own.

Imagination, continued the President, was one of the most enviable possessions of the artist, who might also conceivably be an architect; imagination could lift him from earth to heaven. But for heaven's sake, and for earth's sake too, he asked them not to imagine that a new style of architecture could be invented even by the most gifted student in the full flush of his intuitive perceptions. They were all prone to wish that it could be so, and some, maybe, thought it actually possible: but all history taught the contrary. Wherever they looked they found that changes had been gradual, whether they examined architecture, or mankind, or the universe itself. Violent upheavals there had been in the framework of the earth, but their range had been limited and they had not changed the essential development of the great globe. Violent upheavals had occurred among mankind, but they had not permanently affected the orderly processes which controlled its fate.

In architecture no violent upheaval had occurred. The most distinct change to which it had been subjected was that which they called the Renaissance, when Gothic architecture was superseded by the revived classic. But even that change was not entirely abrupt. To take their own case in England, where there was no other tradition than the Gothic: more than a hundred years elapsed between the invasion of the new classic detail, in the shape of Torrigiano's tomb for Henry VII in Westminster Abbey, and the erection of the first building absolutely free from all trace of Gothic ancestry, in the shape of Inigo Jones's Banqueting House at Whitehall. But these very examples were subject to reservations. For the recumbent figures of Torrigiano's Italian tomb were still those of the Gothic tradition. Foreigner though he was, and imbued with foreign ideas, he was unable to free himself wholly from the influence of his new surroundings. Inigo Jones himself, in his early work, made use of traditional methods of design, and although he ignored them in later years, his contemporaries were unable to do so, but still succumbed to the spell of the past. What the giants of old could not do, the giants of to-day, even the youngest, could hardly hope to achieve: the inevitable conditions of architectural design were too stubborn.

He was convinced that they would better advance their art by pushing forward in the same direction as their predecessors, and towards which they had turned their faces, than by making excursions into the uncharted wilderness on either hand. But he spoke from beneath a certain weight of years; they had all the resilience of youth. Long might they retain it! And when the exuberance of youth should have passed, and they began to look back upon the past, rather than forward to the future, might they be conscious that they had always striven after those qualities of fine architecture which shone through all the incrustations of changing styles—proportion, gracefulness, and masterly ease.

After the conclusion of Mr. Gotch's address followed the presentation of prizes and studentships for the year; and a criticism of the work of the students by MR. HENRY M. FLETCHER, F.R.I.B.A.

At the close of the proceedings, a vote of thanks to the President was moved by Mr. E. J. PARTRIDGE (President of the Society of Architects), and seconded by BRIG.-GENERAL G. H. GATER, C.M.G. (Education Officer of the London County Council).

THE ROMANCE OF THE ROMAN FORUM.

SIR BANISTER FLETCHER lectured recently on "Ancient Architecture" at the Central School of Arts and Crafts. It was the second of the term's lectures, and he described the plan of ancient Rome on her seven hills, with the great Forum Romanum in the central valley. The Capitoline Hill dominated this public-meeting place on one side and the Palatine Hill, with its imperial palaces, on the other. The Forum Romanum was the heart of Roman civic life, and held much the same position as the Acropolis of ancient Athens, only that, for the practical Roman, it included the commerce of the city and was flanked by temples of the gods and courts of justice. Here political demonstrations were held, as they were now held in Trafalgar-square, and from the rostrum orators addressed the populace on matters of stage, and demagogues harangued the "plebs" and instilled the spirit of discontent. Stately colonnades, spacious basilicas, and the majestic temples of a state religion all made a fitting setting for the activities of Roman citizens. Here the old Romans walked and talked, bargained, intrigued and worshipped. But the city grew with its growing empire, and successive emperors, eager to ingratiate themselves with the people, built other forums for the people which rivalled in size, but never in importance, the old Forum Romanum of the citizens. All these Forums were monuments to their Imperial founders and ornaments to the city. Once hives of human activity, they were now dead sites—broken records of a greatness that had passed.

Sir Banister's third lecture at the Central School of Arts and Crafts, was delivered on January 30, and dealt with the circular temples and basilicas, or courts of justice, of the Romans.

LEEDS ARCHITECTURAL SOCIETY.

The annual dinner of the Leeds and West Yorkshire Architectural Society was held at the Great Northern Hotel, Leeds, on Thursday, January 24, and took the form of a Literary Dinner. The President of the Society (Mr. Eric Morley) presided, and amongst others present were the Lord Mayor of Leeds (Sir Edwin Airey), Mr. J. Alfred Gotch (President of the R.I.B.A.), Mr. Lascelles Abercrombie, M.A. (Professor of English Language and Literature at Leeds University), Mr. A. Hamilton Thompson, M.A., D.Litt., F.S.A. (Reader in Mediæval History at the Leeds University), Mr. C. H. Reilly, M.A. (Professor of Architecture at Liverpool University), Mr. H. S. Chorley, M.A., F.R.I.B.A., Mr. W. Alban Jones and Mr. T. H. Foggitt (Vice-Presidents of the Leeds and West Yorks' Architectural Society), Mr. W. Whitehead (Treasurer), Mr. F. L. Charlton (Secretary), Mr. J. C. Procter, Mr. T. Butler Wilson, and Mr. W. J. Turnbull.

Mr. H. S. Chorley, in proposing the toast of "The City of Leeds," said Leeds was at the present time, with the one exception of Liverpool, the best of any city as regards housing schemes. Leeds was also a pioneer in the matter of arterial roads and the development of suburbs, and also had one of the largest schemes in existence for the wiping out of slums. This progress was mainly due to the fact that there were in the city a large number of public men who were prepared to give up their time to the city's welfare.

The Lord Mayor, in responding, said architects were very great idealists, and like most idealists they were very expensive luxuries. They outlined for the ordinary layman the beauties of buildings, which, if they were erected, would be an unceasing joy. These, however, could not be obtained; first, because of the great cost of building; second, because of the lack of support from the would-be owners; and, third, because of the great demand for utility rather than for beauty. The general public needed educating to the value of architecture and its services. They were living in times of great publicity, and it would be to the advantage of the community in general if architects undertook some form of publicity in the shape, for example, of lectures. He would like to remind them that many of their ideals would not be possible but for the builder—the hewers of wood and the drawers of water. Slum property was still wrongly looked upon as a necessity in industrial centres. Mean streets and mean houses meant men, women and children were neglected. If they could only do something to improve the industrial centres it would have the effect of allowing people to live better and purer lives. He wished that the architectural profession might prosper as it so thoroughly deserved.

Mr. Lascelles Abercrombie, in proposing the toast, "The Literature of Architecture," said that he felt that literature had a certain unfair advantage in all such topics as these, for the people who practised the other arts, when they desired to explain themselves, or to draw attention to themselves, could do nothing else but call in the art of literature. Yet the art of literature had been less than fair to the art of architecture. There was a tendency among novelists to make the architect slide almost imperceptibly into the villain. That was probably an attempt on the part of the public to get back at the architect for some of the things from which they had suffered, and for which they quite ignorantly blamed the architect. It was undoubtedly less than grateful on the part of literature not to take that high view of the art of architecture. Literature, of all the arts, was the one which must always realise the value of civilisation, the one thing which perhaps made life worth living. Civilisation could not exist without town life, which was the instrument of civilisation, and it was architects who provided town life with its embodiment. And there was another reason. As a provincial he, of course, looked upon London as a place where provincials went to spend their money, but that was not the way in which London regarded the provinces. There was no reason why London should be regarded exclusively as the cultural capital. If we looked back in history, we found that towns half the size of Leeds, towns such as Athens and Florence, had been centres and capitals of culture, because they were entirely self-sufficient and self-reliant. That was what our English provincial towns should be. What was required was confidence in their powers of culture and of civilisation. Architects had long ago realised that their interests lay in the home town, and that they did not need to rely on the culture of the capital. It would be a good thing for the life of England when the members of the other arts imitated the architects in forming such cultural centres as that which he saw before him.

Mr. Gotch, in reply, having referred to the growing influence of the provinces in the affairs of the Institute, said that of all the great arts literature and architecture seemed to him to be the most widely divorced. The fact was that the great writers who had obtained the ear of the world had had little or no acquaintance with architecture. They had no other knowledge of it than enabled them to touch upon its fringes and outskirts. No one who had not been trained in the mysteries and detail of architecture could ever hope to deal with it in literature with success. Architecture hardly ever appeared in the poets, or, if it did, it was in but a fleeting manner. Chaucer, Spenser, Shakespeare, Milton and Gray all referred to architecture, but their descriptions were not written from the architectural point of view. In the writings of Ruskin there was a very intimate connection with architecture, but what architect who knew his Ruskin would describe him as a guide to the profession? He appealed to the emotions, and he had stirred in the public mind feelings which would be of benefit in that they would have opened the eyes of the public to the beauty that laid in architecture. But he was an unsafe guide because he had had no architectural training. To write a poem on architecture it was necessary to be fully versed in the history of its nature and in the logic of its construction. Perhaps some genius might still arise who, proved as an architect, might in the intervals give to the world glowing pictures of architecture full of colour and movement and full of truth.

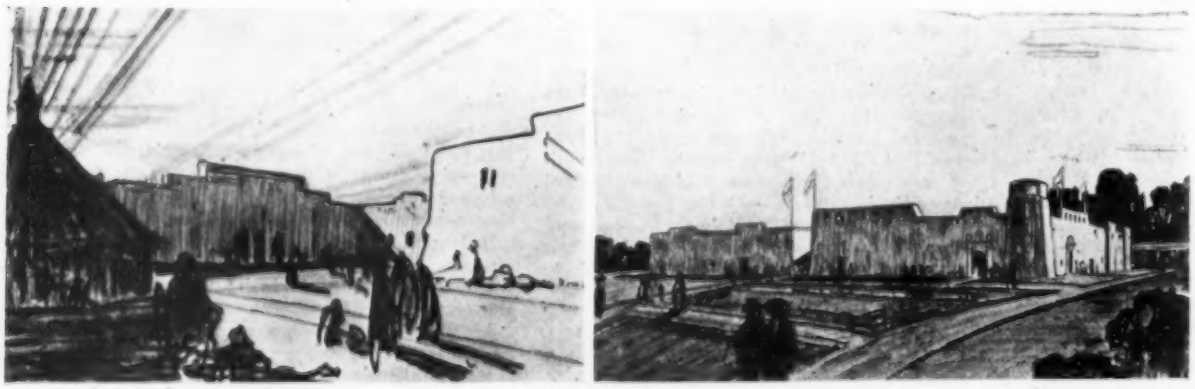
Professor Reilly, in proposing the toast, "Architecture Pure and Undefiled," said that he had the greatest faith in the future of the profession because the education of architects was now being taken seriously. This would make a new post-war architecture which would be secured by the straight-forward answering of problems which would be in a sense undefiled, because it would be carried out in a spirit which was pure and undefiled. He thought that they should make their own centres independent of London. In towns like Leeds they could do extraordinary things in architecture, as they could in other arts.

Mr. Foggitt, in responding, said that he thought the ideal of architecture pure and undefiled was being realised bit by bit. Social progress during the past two or three years had been great, and at the same time the progress of architecture had been great also. With regard to housing schemes, he thought that there was a tendency to try and do something better than had been done before. The ideals with which the proposals for the housing schemes had been begun were great ideals, and the programme was a great programme. The attainment of some of those ideals had been found impossible, but the fact remained that there had been an effort made for better things, and that was a great step forward. Before we had had indifference and now we had a recognition that better things were desirable and some steps had been taken to gain those better things. In London there was now a realisation on the part of the public, more particularly among the great commercial and business houses, that architecture was, after all, something to be desired, and week by week buildings were being erected which had that qualification, and which were steps forward.

Professor Thompson, in proposing the toast of "The Architectural Profession," said that architects owed far more to the mediæval spirit than they were perhaps induced to realise. They had seen how possible it was to beautify the streets and squares of our modern towns and to take advantage of modern schemes in town planning in a spirit which turned upon tradition and at the same time was purely modern. He saw in architecture at the present time a really true and sincere carrying out of the spirit of the past, and architecture of to-day had a tremendous future before it.

Mr. Eric Morley, responding, said that the profession had been through some very hard times. The artificial spirit of the day had very nearly engulfed them in its inexorable tide of progress. The future held bright hope and there were two things on which they could count. The first was that the public was beginning to show a definite interest in their work, and the second was the progress that was being made in architectural education. These two facts meant that in the future an architect was not only going to have the pleasure of working for a discriminating public, but that he was going to be trained for his job.

Responding to the toast of "The Guests," which was proposed by Mr. T. Butler Wilson, Mr. W. J. Turnbull said he would like to draw the attention of architects to the great strides which had been made in the housing of the people under the direction of the Leeds architects. In the matter of lay-out, the excellence of the houses to-day was due largely to the efforts which architects had put forth.



British Empire Exhibition West Africa Compound. West Africa Building.

THE LAW RELATING TO BUILDING.

By W. T. CRESWELL, Lic.R.I.B.A., F.R.S.I. (*Barrister-at-Law*).

V.—POSITION OF ARCHITECT UNDER THE CONTRACT AND TOWARDS THE CONTRACTOR.

After his plans have been approved by the employer the architect has no authority to invite tenders until he has the instructions of the employer to do so. Up to this stage he is merely a "skilled draughtsman." It follows that he can only claim remuneration as such until he has been instructed to superintend the works as agent of the employer. Further, even after the instructions of the employer to obtain tenders, and the receipt of any tender at or near the estimated price agreeable to the employer, the architect has no authority to enter into any contract for the work (see Hamer *v.* Sharp (1874), L.R. 19 Eq. 108).

After a contract has been duly entered into, the contractor is entitled to recover for all work done under the architect's or surveyor's orders, though such work may exceed the employer's limit; unless the contractor has been definitely informed of the employer's limit; if he has not, after payment has been made to the contractor, the employer may recover any loss from the architect or surveyor due to his having allowed the contractor to exceed the limit previously given him by the employer.

When once the architect or surveyor has taken over the superintendence on the employer's behalf, the contractor must obey all instructions of the architect or surveyor, even if he considers them unreasonable; there is no implied contract or warranty on the part of the employer that the architect or surveyor will only give such instructions as are reasonable (see Jones *v.* St. John's College, Oxford (1870), L.R. 6, Q.B. 115).

Nor can the architect or surveyor dismiss the contractor unless specially empowered by the contract to do so. Since the employer cannot be bound by orders or representations on the part of the architect or surveyor varying the contract, it is useless for the contractor when called into question to plead in reference to variations or alterations that the architect or surveyor represented to him that the contract must be varied either as to design or materials used, or that certain terms of the contract would be waived. In general, the limit of the powers and authority of the architect and surveyor should be such as is clearly defined in the written contract.

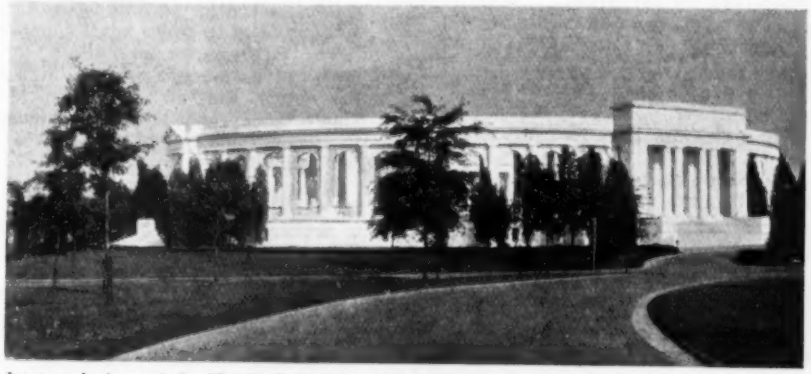
Architect's authority to employ a Quantity Surveyor.

Usually an architect employs a quantity surveyor to prepare bills of quantities for proposed works, if they are, in his opinion, of sufficient dimensions to render it obviously necessary that the builders in tendering should have this aid to giving a satisfactory estimate of cost. This authority, therefore, becomes an implied authority, in the case of larger undertakings, when he has been instructed to obtain tenders—but in general he should see to it that he has express authority—and more especially for smaller buildings—before calling in a quantity surveyor. The custom of architects employing quantity surveyors has been recognised in the English Courts, but does not appear to have been so recognised in the Irish or Scottish Courts.

It follows that an architect has no authority to prepare bills of quantities himself unless by the instructions of the employer; although it has been held (see Lansdowne *v.* Somerville (1862), 3 F. & F. 236) that where the architect and the employer are both familiar with the custom where it exists, then the architect has an authority. In the above case the judge left the following questions to the jury:—"Was there such a custom, and was it known to the parties, and did they contract on the footing of the custom?" The jury found affirmatively in each question, and judgment was as above. But in Antisell *v.* Doyle (1899) 2 I.R. 275 (where the quantity surveyor who had been instructed by the architect sued the employer for payment of his fees) the jury found that the employment was neither within the scope of the architect's authority nor sanctioned by the defendant, and that no custom exists sanctioning the architect's action; the majority of the judges stating that the alleged custom could not be relied upon as generally practised.

It follows also that if the lowest tender received by the architect exceeds the employer's limit, he has no authority, without the consent of the employer, to employ the quantity surveyor to adjust his bills of quantities to tally with any alterations or variations of plans, designs, etc., which have been made with the consent of the employer in order to bring the cost down to his limit. Especially as, knowing the employer's limit, the architect himself is responsible for not keeping his design within that limit. Further, the architect must have the employer's instructions before employing a quantity surveyor to measure up deviations in the works; especially if he himself is designated in the contract as the person to settle the accounts at conclusion—but, again, custom has been successfully pleaded where large and extensive measurements were involved.

If the employer should question any certificate granted by the architect, the latter may suggest that a quantity surveyor be employed to measure up the work; and, if the employer agrees, he is, of course, to be charged with the surveyor's fees. However, if the architect calls in the quantity surveyor without first obtaining the consent of the employer, then he is himself chargeable. In all cases, however, where the employer is informed that quantities have been prepared, and he ratifies the employment by acquiescence, he cannot maintain an objection to pay the fees of the quantity surveyor on the plea that the architect had no authority to employ him.



From a photograph by Mr. E. J. Strange, F.I.O.B.

Amphitheatre (in marble) of the Arlington National Cemetery, Washington, U.S.A.

R.I.B.A. MINUTES.

We take the following notes from the Minutes of the Council Meeting, held on January 21:—

The Royal Scottish Academy.—The congratulations of the Council were conveyed to Mr. George Washington Browne on his election as President of the Royal Scottish Academy.

Smoke Abatement.—It was decided to make representations to the London County Council on the subject of smoke abatement in London.

Royal Sanitary Institute.—Mr. H. D. Searles-Wood, F.R.I.B.A., was appointed to represent the R.I.B.A. at the Annual Congress of the Royal Sanitary Institute, to be held at Liverpool in July.

Shortage of Skilled Labour in the Building Industry.—Professor S. D. Adshead and Mr. W. Alexander Harvey were appointed as additional representatives of the R.I.B.A. on the Conference which has been arranged to consider this question.

The Letting of Office and other Accommodation.—The following resolution was passed and ordered to be published in the R.I.B.A. *Journal*:—

"The Council view with disapproval the exhibition by architects of boards upon which are displayed notices that offices or like accommodation are to be let and that applications to the architects are invited. This resolution does not preclude the architect of a building, at the request of his client, from exhibiting a board inviting prospective tenants to inspect the plans at his offices, provided that the architect receives no commission for lettings resulting, nor does it apply to the letting or selling of land."

R.I.B.A. Scale of Charges: Clause 5.—It was decided to publish a note in several successive numbers of the *Journal* warning Members and Licentiates that they should, with reference to the above clause, protect themselves against the contingency of the work being subsequently proceeded with.

Sessional Papers.—Mr. Hope Bagenal, having found it necessary to postpone the delivery of his lecture on "Planning for Musical Requirements," on March 17, Major Harry Barnes was invited by the Council to deliver a lecture on "National Housing" on that date.

MEETINGS.

FRIDAY, *February* 8.

Town-Planning Institute. — Discussion on "Streets." At 92, Victoria-street, S.W.1. 6 p.m.

London Society.—Mr. C. B. Levita on "Slum Areas in London." At John-street, W.C.2. 5 p.m.

Royal Institution.—Sir Arthur Evans on "Recent Lights on the Minoan Art of Crete." At 21, Albemarle-street, W.1. 9 p.m.

MONDAY, *February* 11.

Surveyors' Institution.—Mr. J. J. Dove on "Approximate Estimates for the Development of Building Land"; Mr. A. Paull on "Approximate Estimates." At 12, Great George-street, S.W.1. 8 p.m.

WEDNESDAY, *February* 13.

Royal Society of Arts.—Mr. H. Maxwell-Lefroy on "The Preservation of Timber Roofs from the Death-Watch Beetle." At John-street, W.C.2. 8 p.m.

L.C.C Central School of Arts and Crafts.—Sir Banister Fletcher on "Ancient Architecture: Theatres, Amphitheatres and Circuses." At Southampton-row, W.C.2. 6 p.m.

THURSDAY, *February* 14.

Society of Antiquaries.—Mr. C. R. Peers on "Sculptured and Inscribed Stones from Lindisfarne." At Burlington House, W.1.

Edinburgh Architectural Association.—Mr. L. M. Tye on "Illuminating Engineering." At 15, Rutland-square. 8 p.m.

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ILLUSTRATIONS.

The British Empire Exhibition.

In this issue we give a number of illustrations of the reinforced concrete buildings now completed or nearing completion at Wembley, from the designs of Messrs. J. W. Simpson and Maxwell Ayrton, FF.R.I.B.A.

The combination of social jollity with personal improvement such as Chaucer has depicted for us in his immortal Canterbury Tales, where the dual aspects of the pilgrimage are set forth with the holiday spirit in greatest prominence, applies also to the exhibitions of these modern times.

Instruction is joined to relaxation rather than to the coercive discipline of school or office routine. The visitor is invited to enjoy himself and look about him in surroundings that present sufficient of the elements of both novelty and order to awaken thought and stimulate a flow of ideas.

It is in this fashion that the British Empire Exhibition at Wembley has been designed. Fun and frolic, scenic railways, and the rest are proper accompaniments to the more serious exhibits, and provide a common meeting place for persons whose normal tastes and activities lie miles apart from one another.

The facilities for enjoyment, for obtaining food and drink, and for reposeful methods of locomotion are all being provided on an ample scale, and figure prominently in the handbook issued by the Executive Council of the Exhibition.

A great Exhibition, attracting pilgrims from all parts of the Dominions, also serves a serious purpose, but that purpose would fail of fulfilment in the absence of good will and an amiable temper in all concerned. If this sunny outlook can be maintained, the wonders displayed in the several gigantic buildings will be inspected to the best advantage, and certainly some very interesting features will be present.

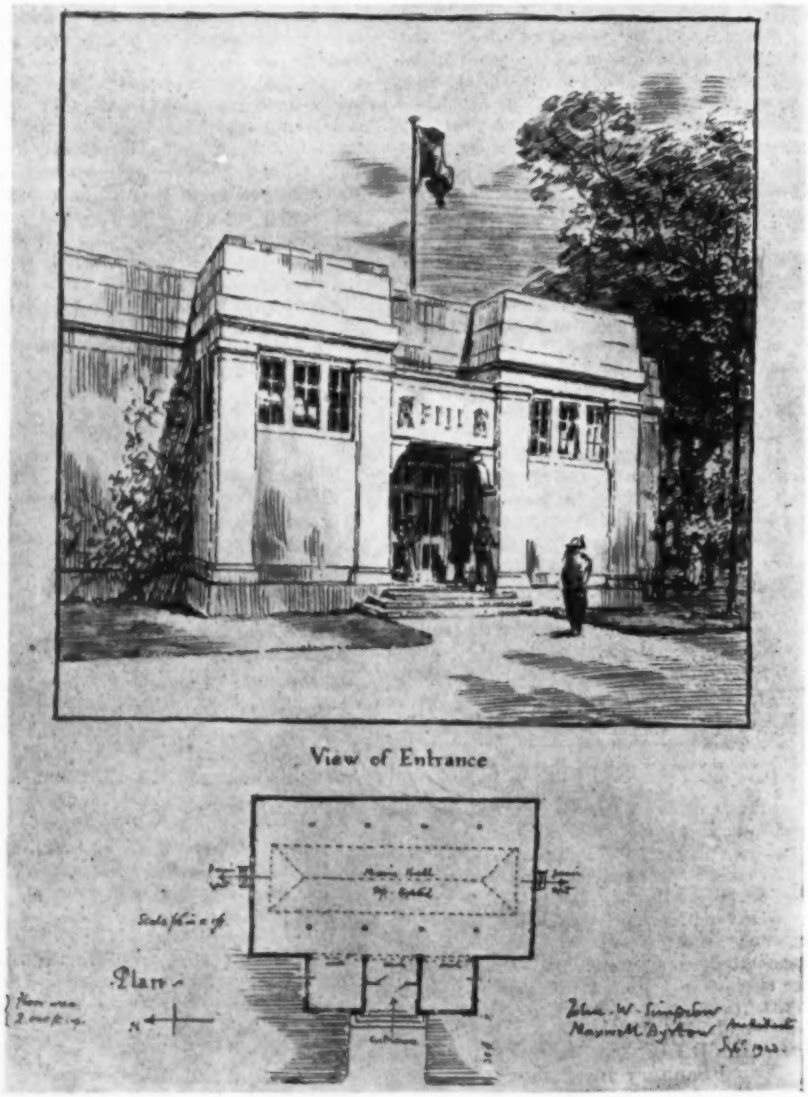
The enormous size of some of the buildings will undoubtedly receive attention. "The Australian Pavilion is as big as the whole of Olympia," the Australian contribution to the Exhibition being valued at £200,000, and the space covered 5¾ acres.

"These exhibits" (to quote the handbook) "taken in their entirety, will bring home to the visitor the enormous wealth of the Empire, the immense strides being made overseas in the development of both agriculture and manufactures, the ever-increasing facilities and attractions offered to the intending migrant, and the important part each State plays in making the Empire a rich, powerful, and indivisible whole."

The Palace of Engineering and the Palace of Industry each cover very much greater space than the Australian exhibit, and their contents will be housed in the finest and largest buildings ever erected for the purposes of a self-contained exhibition. It will be instructive to ascertain, when the Exhibition is open and thronged with visitors, whether the effect of great dimensions produces the effect of great scale, or whether, as in so many gigantic buildings, mere size counts for little after it has exceeded a certain maximum.

The great space is, however, divided among exhibitors who require in some cases as much as 4,000 to 8,000 square feet for their stands, so that it may be taken that the great size of the building is founded upon practical requirements. Small things, as well as great, will be on show, and it is proposed to set up the Queen's Dolls' House, to which so many notable artists and craftsmen have contributed of their best.

The antiquarian flavour of British art today will find its echo in the series of rooms decorated and furnished in the styles characteristic of the years 1750, 1815, 1852, and 1888. The two last of these coming in the hitherto despised Victorian period, it may be questioned whether any revulsion of feeling in its favour will be established. The arts of the period found substantial approval and support in their own day, and it would be a whimsical overthrow of a deep-rooted prejudice were the Victorian style to return to favour now.



Entrance to British Empire Exhibition.
MESSRS. J. W. SIMPSON & MAXWELL AYRTON, FF.R.I.B.A., Architects.

"Natsopa House."

This building, at the corner of Blackfriars-road and Meymott-street, London, S.E. 1, is designed as an office building for the London Branch of the National Society of Operative Printers and Assistants, and is, as the drawing suggests, to show hand-made bricks and stone facings over the steel framework.

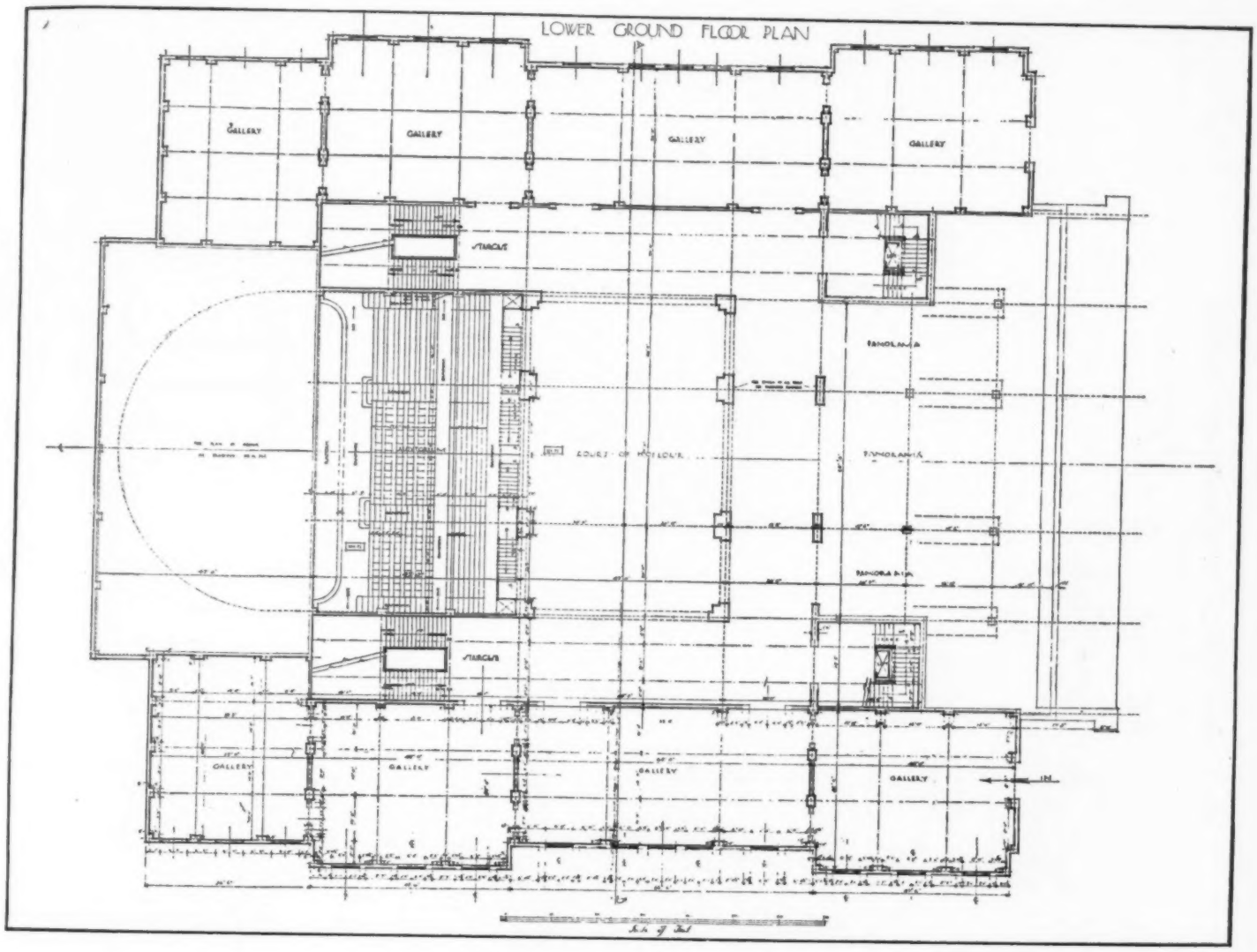
Messrs. Harding & Williams, of Leicester, are the architects, and the contractors are Messrs. Arthur Vigor, Ltd., 20, Knightsbridge, S.W. 1. The sub-contractors include: Williams, Gamon & Co., steel casements; Porcelain Tile Co., tile work; Carter & Co., terazzo work; Engert & Rolfe, Ltd., asphalting; John Ellis & Sons, Ltd., stone work and staircases; Haywards, Ltd., patent area and lantern lights; Archibald D. Dawnay & Sons, Ltd., steelwork; Hollis Bros. & Co., Ltd., wood block floors; Siegwart Fireproof Floor Co., Ltd., patent floors; Doulton & Co., Ltd., sanitary fittings; Mr. C. H. Kenney is the clerk of works.

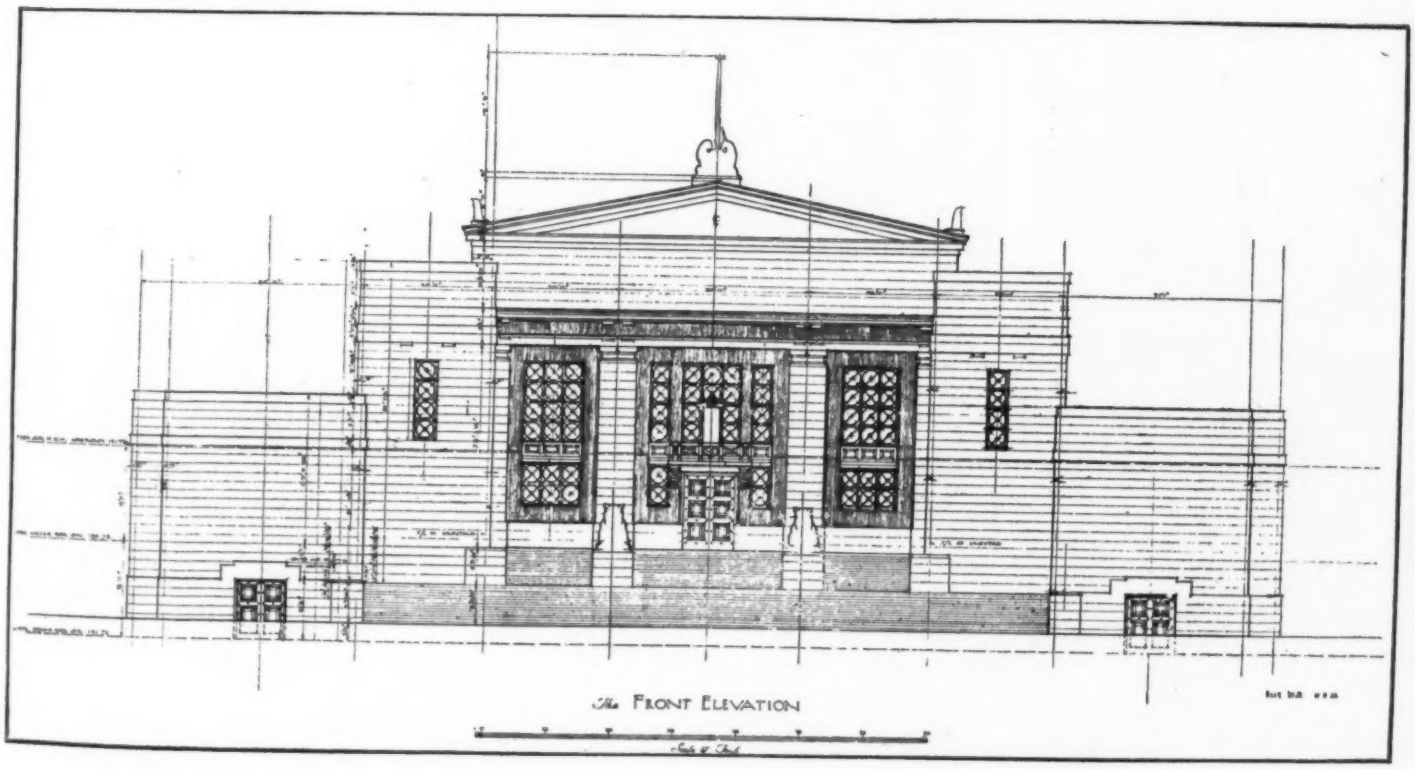
Housing Scheme at Purley.

We illustrate on p. 223 a housing scheme, to be carried out by private enterprise, on the Roke Farm Estate, Purley. The scheme, which comprises 63 houses in all, has been approved by the local authorities and also by the Ministry of Health, and complies with the "private enterprise" provisions of the Housing, &c., Act, 1923 (which was fully reviewed in our issue for August 24, 1923).

Subject to certain conditions the houses will be eligible for a subsidy of £75 each. The superficial area of each cottage is limited to 800 ft. The accommodation comprises a living room, scullery (or working kitchen) on ground floor; three bedrooms, bathroom, and separate w.c. on first floor. The cottages are to be built in groups of two, three, four and five; and the exterior design will be varied to avoid monotony. The lay-out of the site provides for access to the gardens from passage-ways at the back.

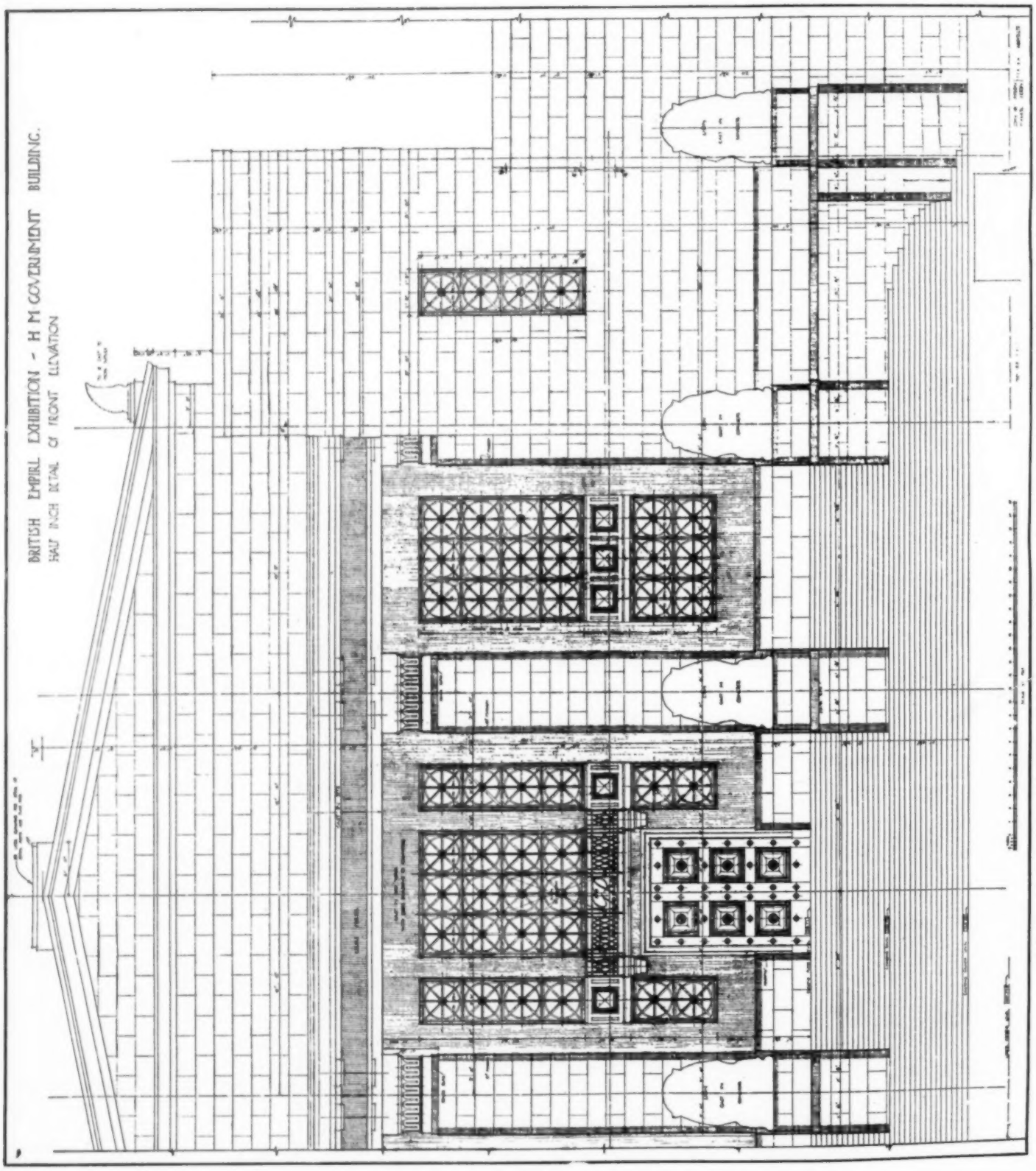
The architect is Mr. Chas. E. Hanscomb, F.R.I.B.A., of Station-approach, Sanderstead. The builder is Mr. J. P. Oldaker, of Purley.



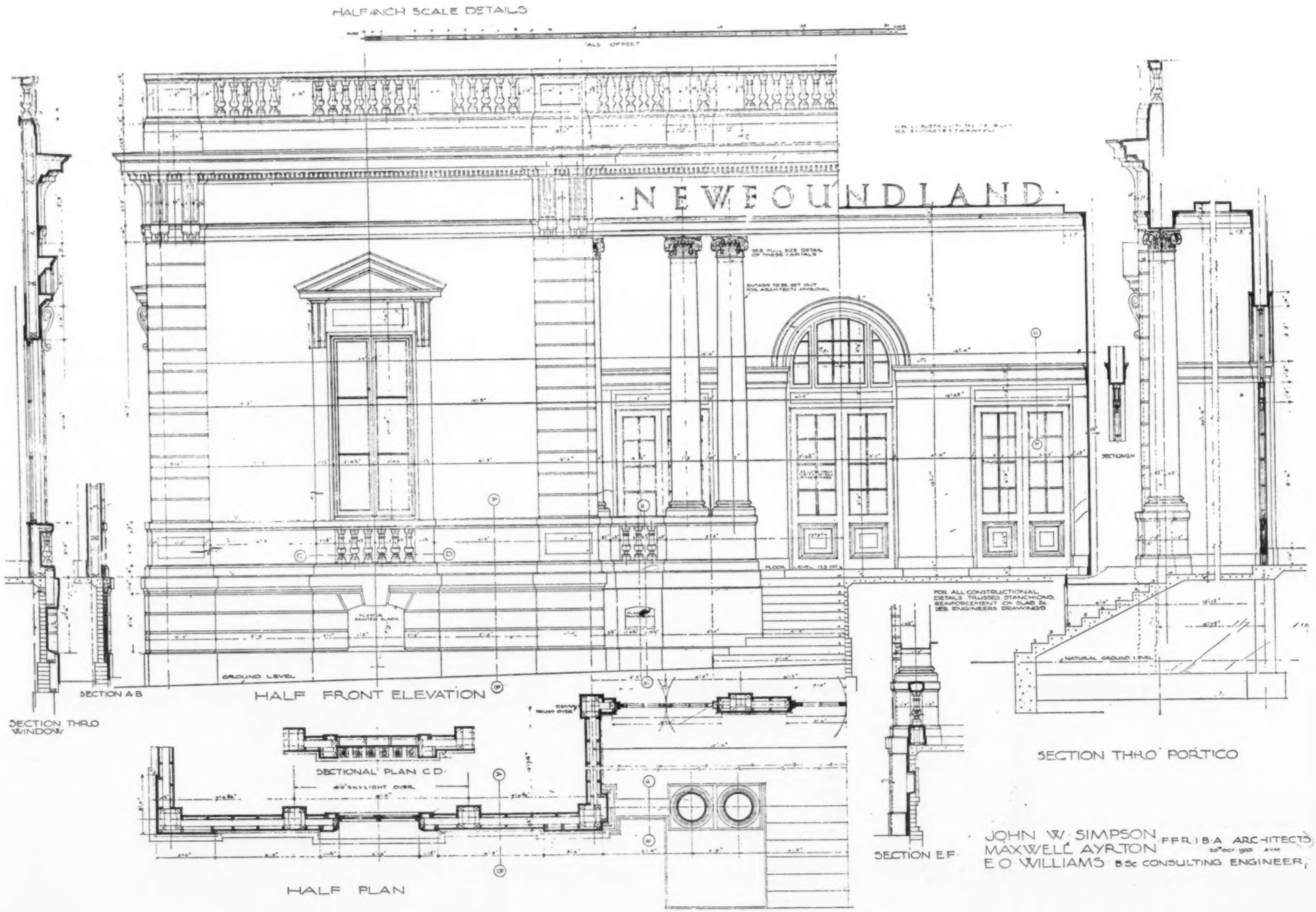


British Empire Exhibition: British Government Building.

MESSRS. J. W. SIMPSON & MAXWELL AYRTON, FF.R.I.B.A., Architects.

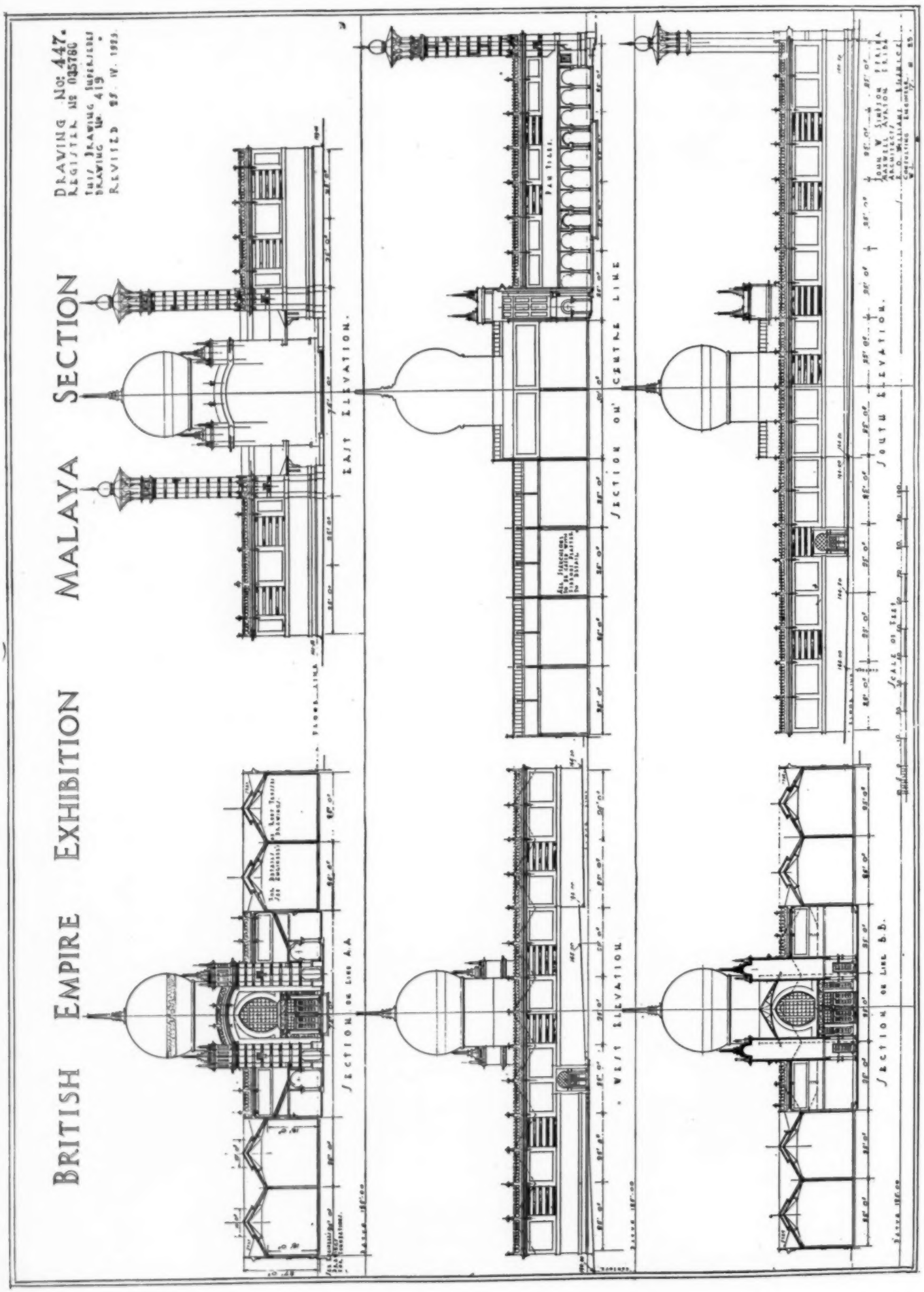


British Empire Exhibition. MESSRS. J. W. SIMPSON & MAXWELL AYRTON, FF.R.I.B.A., Architects.



British Empire Exhibition : Newfoundland Building. MESSRS. J. W. SIMPSON & MAXWELL AYRTON, FF.R.I.B.A., Architects.

BRITISH EMPIRE EXHIBITION MALAYA SECTION



MESSRS. J. W. SIMPSON & MAXWELL AYRTON, FF.R.I.B.A., Architects.

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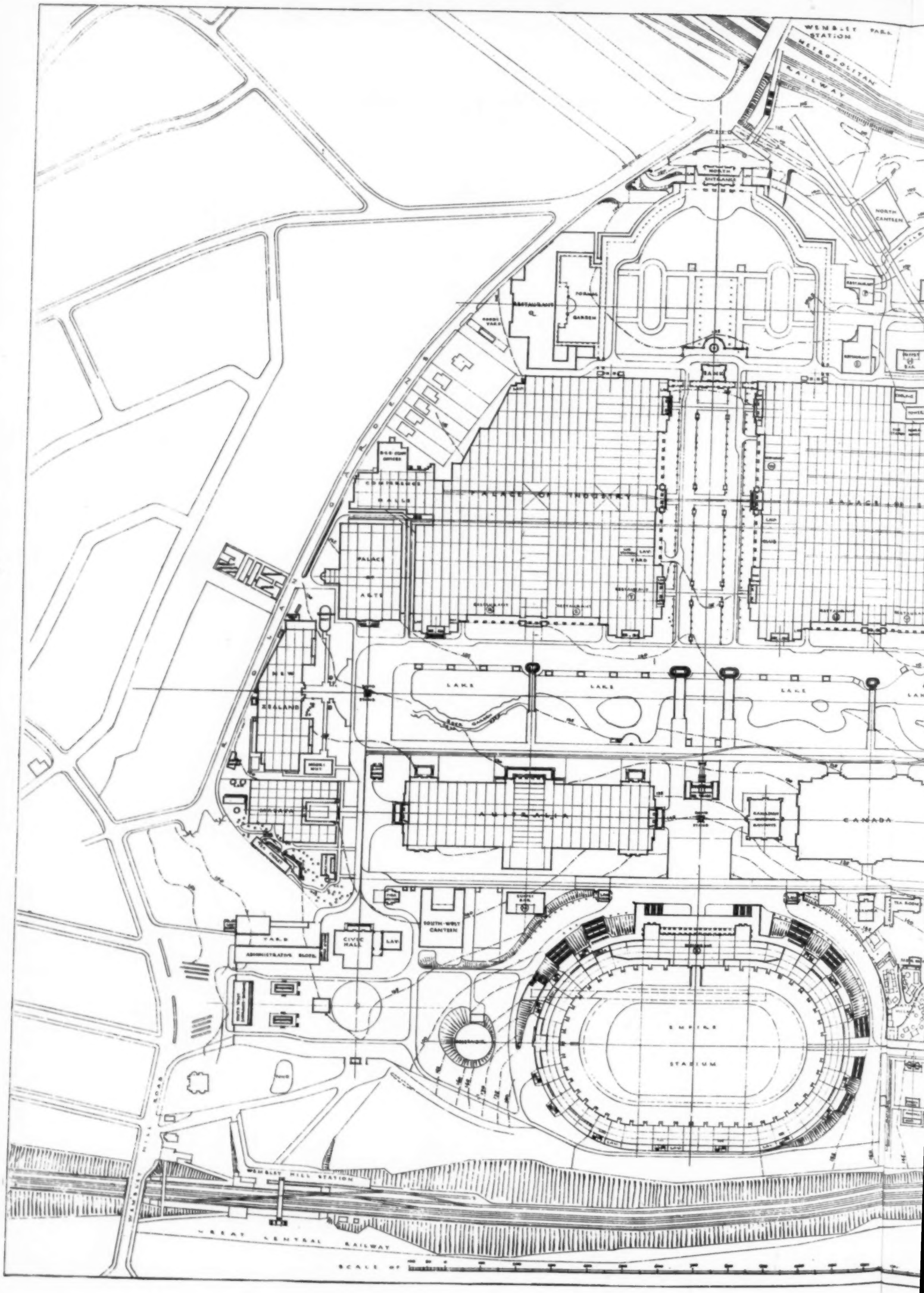

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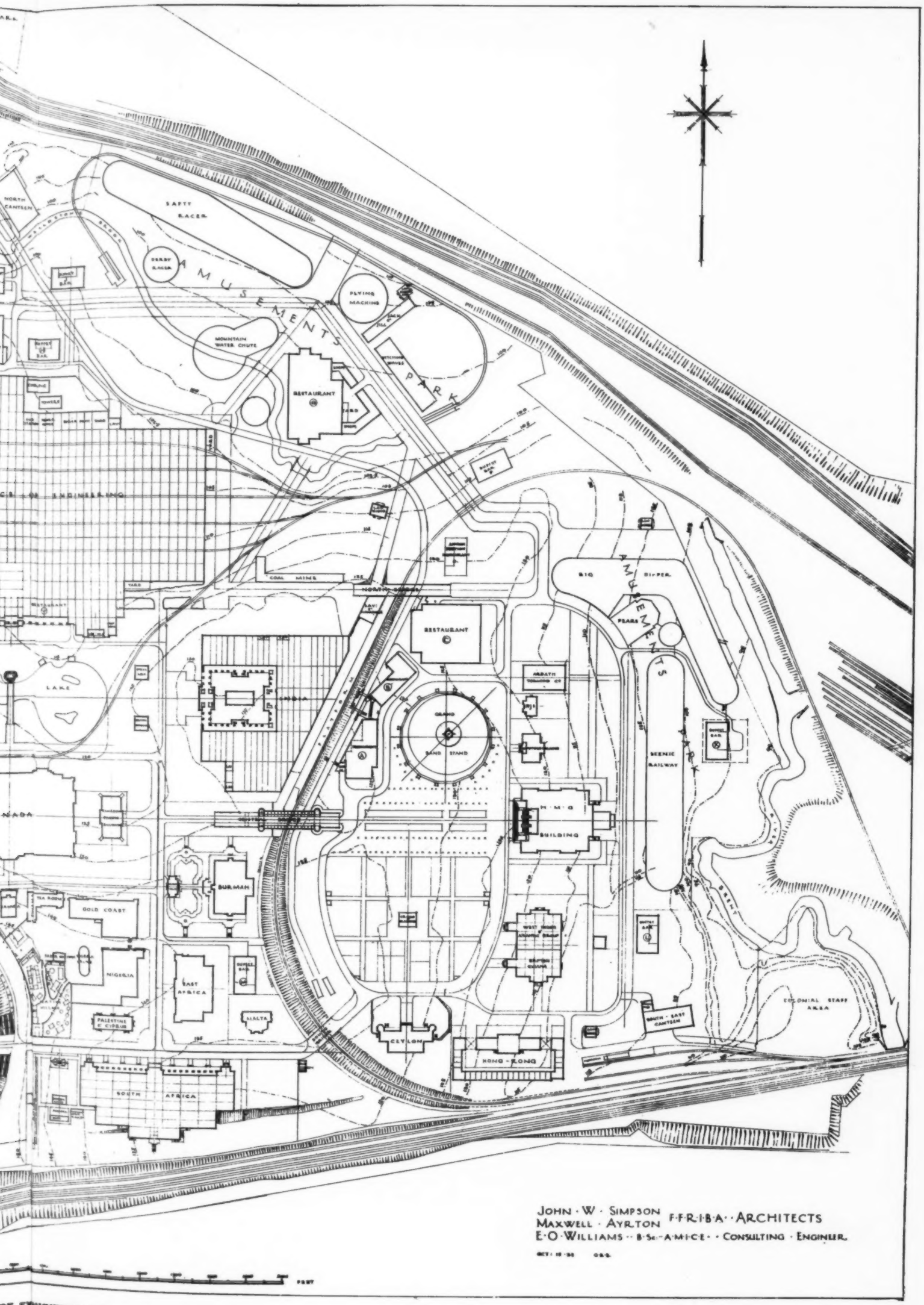
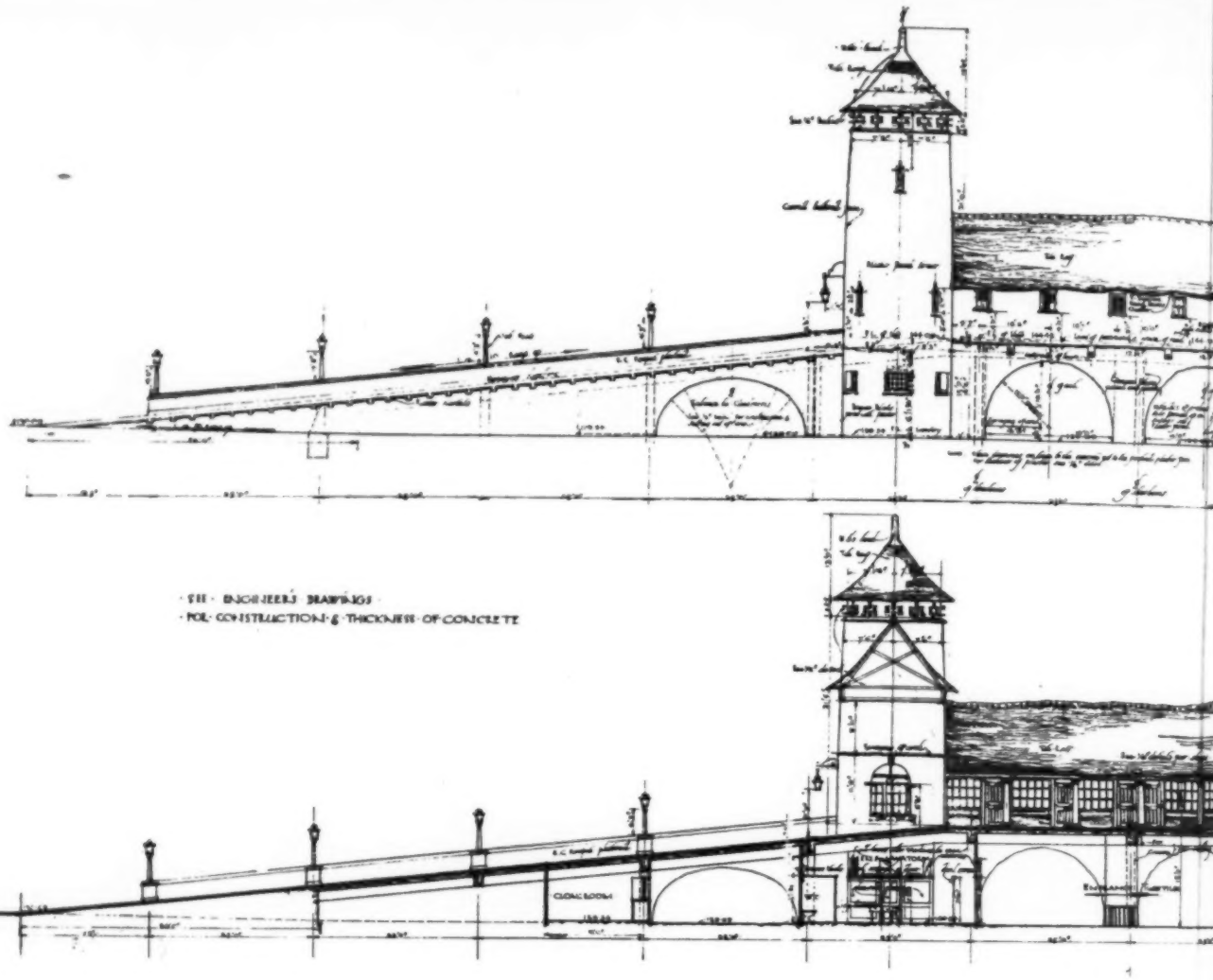


RE EXHIBITION, WEMBLEY.

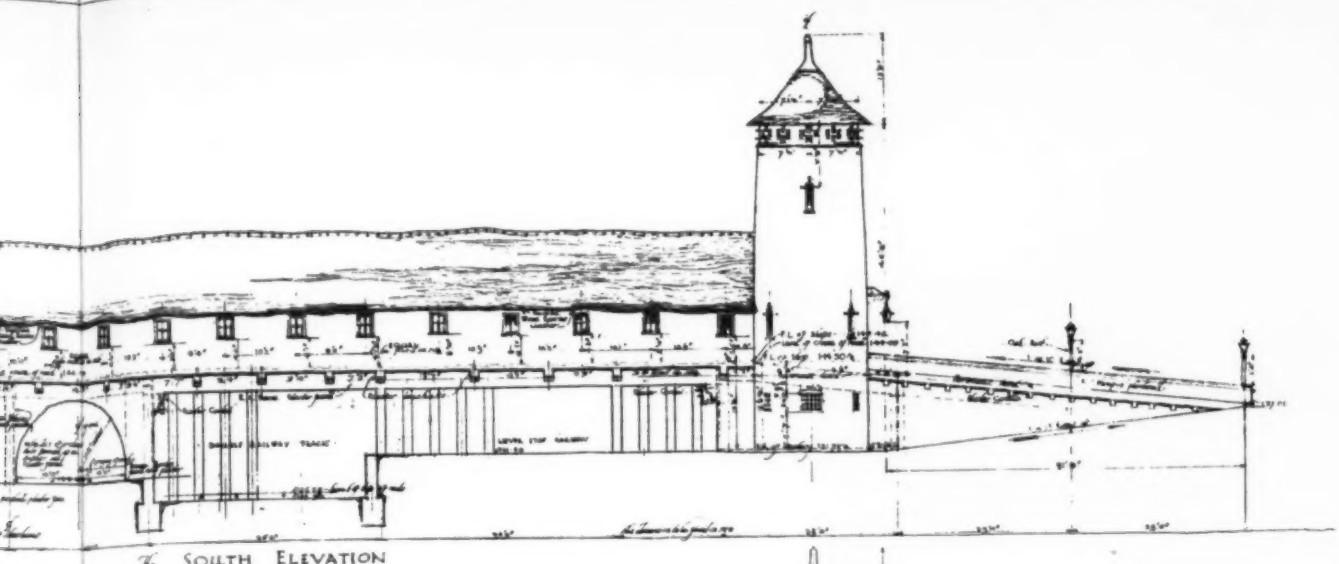
MAXWELL AYRTON, FF.R.I.B.A., ARCHITECTS.



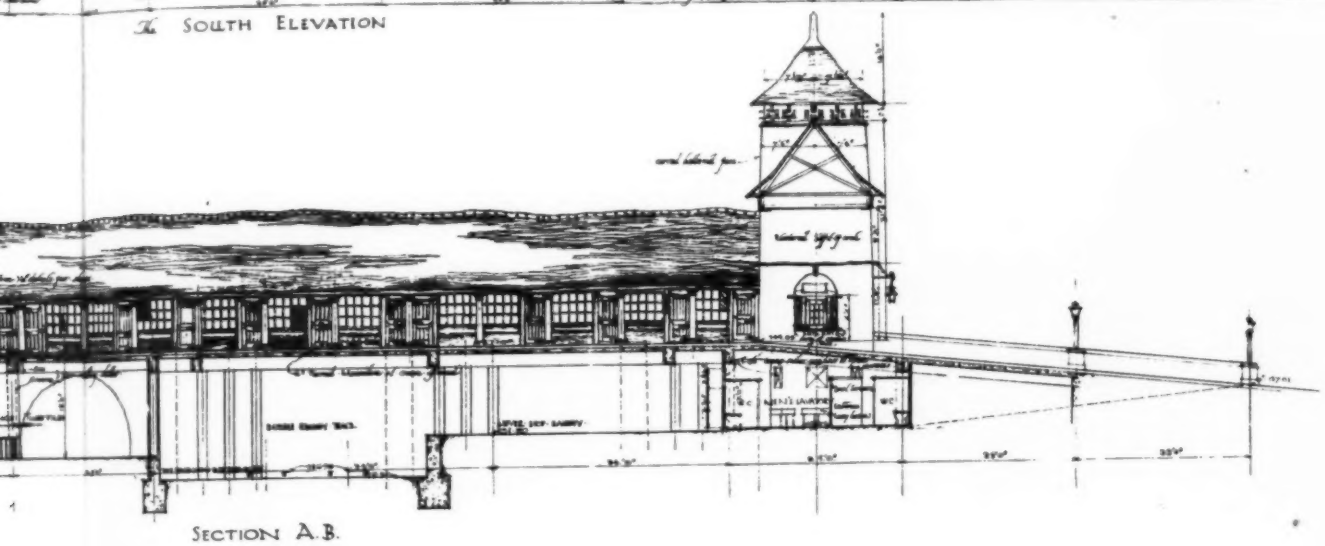
SECTION C-D

BRITISH EMPIRE EXHIBITION, WEMBLEY: BRID

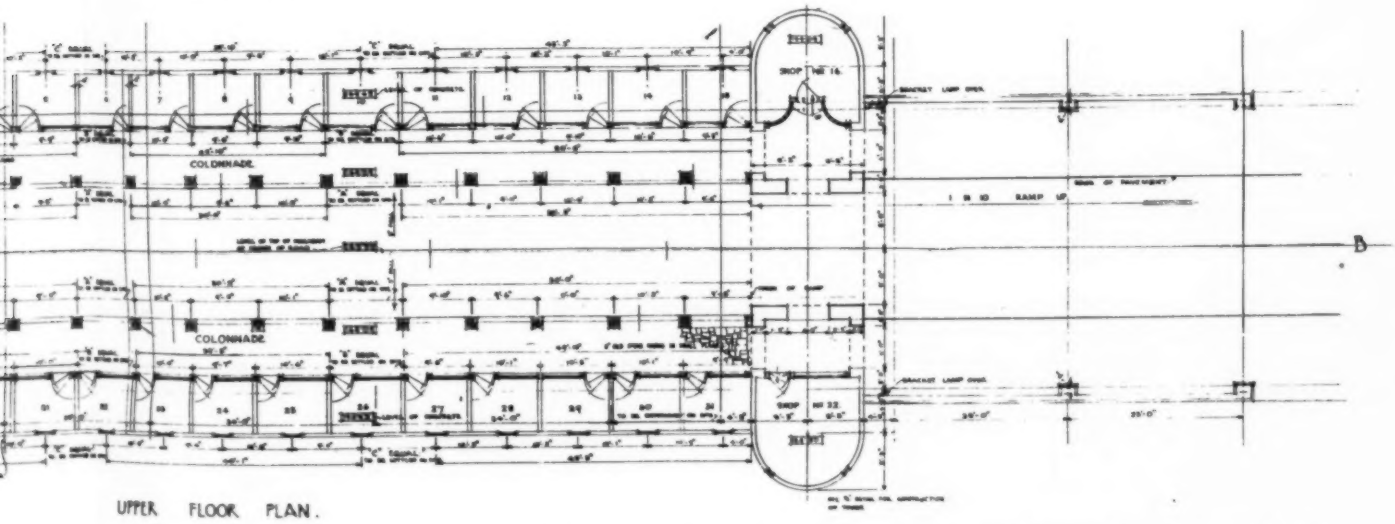
MESSRS. JOHN W. SIMPSON & MAXWELL AYRT



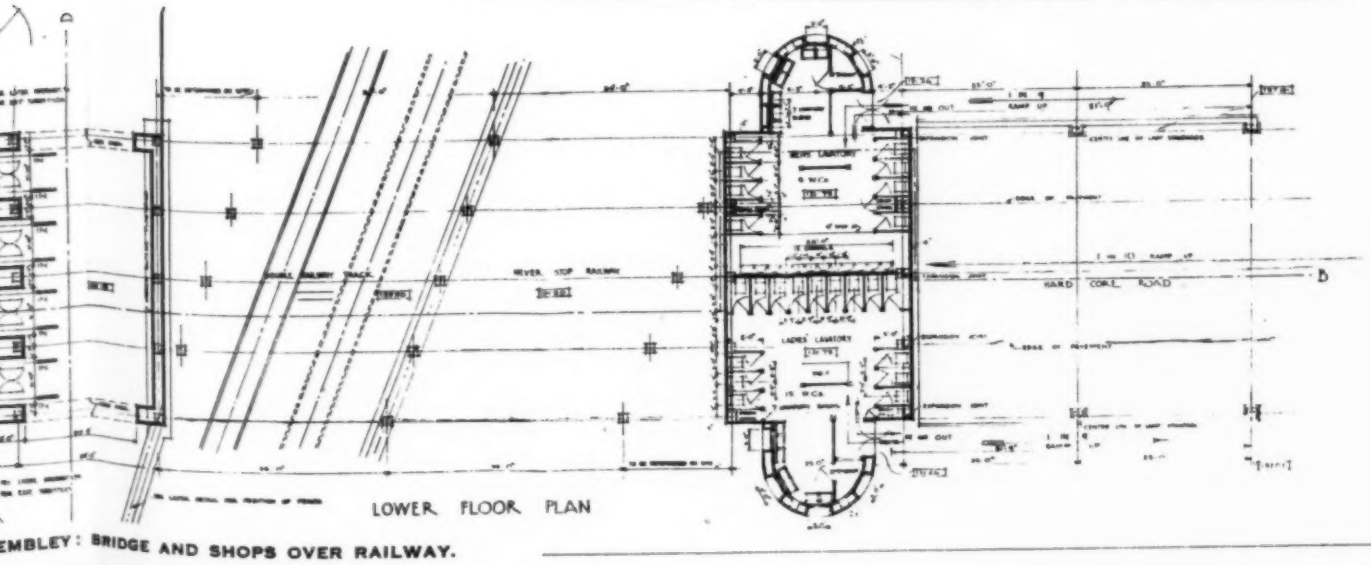
SOUTH ELEVATION



SECTION A.B.



UPPER FLOOR PLAN.

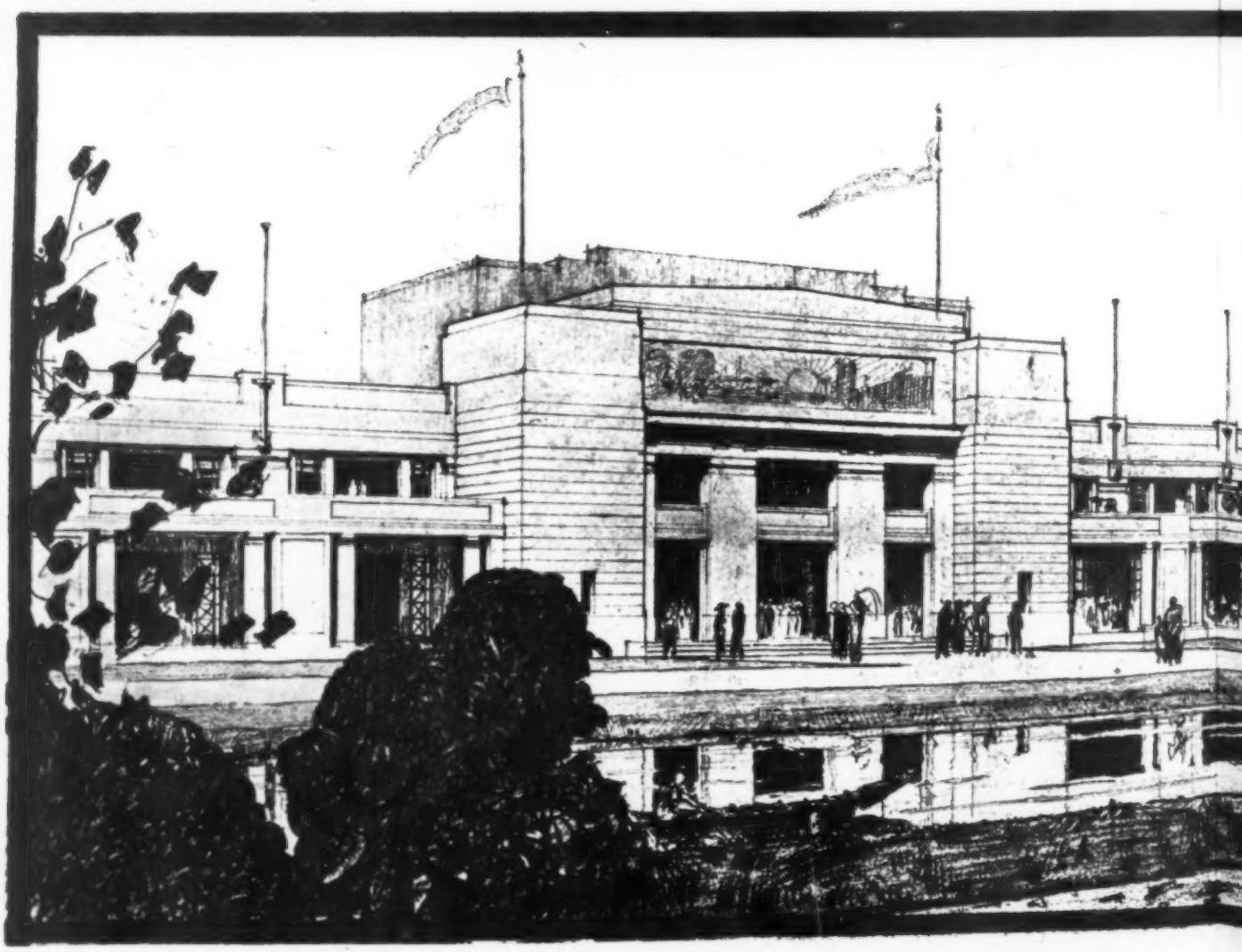


LOWER FLOOR PLAN

EMBLEY: BRIDGE AND SHOPS OVER RAILWAY.

MAXWELL AYRTON, FF.R.I.B.A., ARCHITECTS.

NEW ZEALAND PAVILION
BRITISH EMPIRE EXHIBITION 1924



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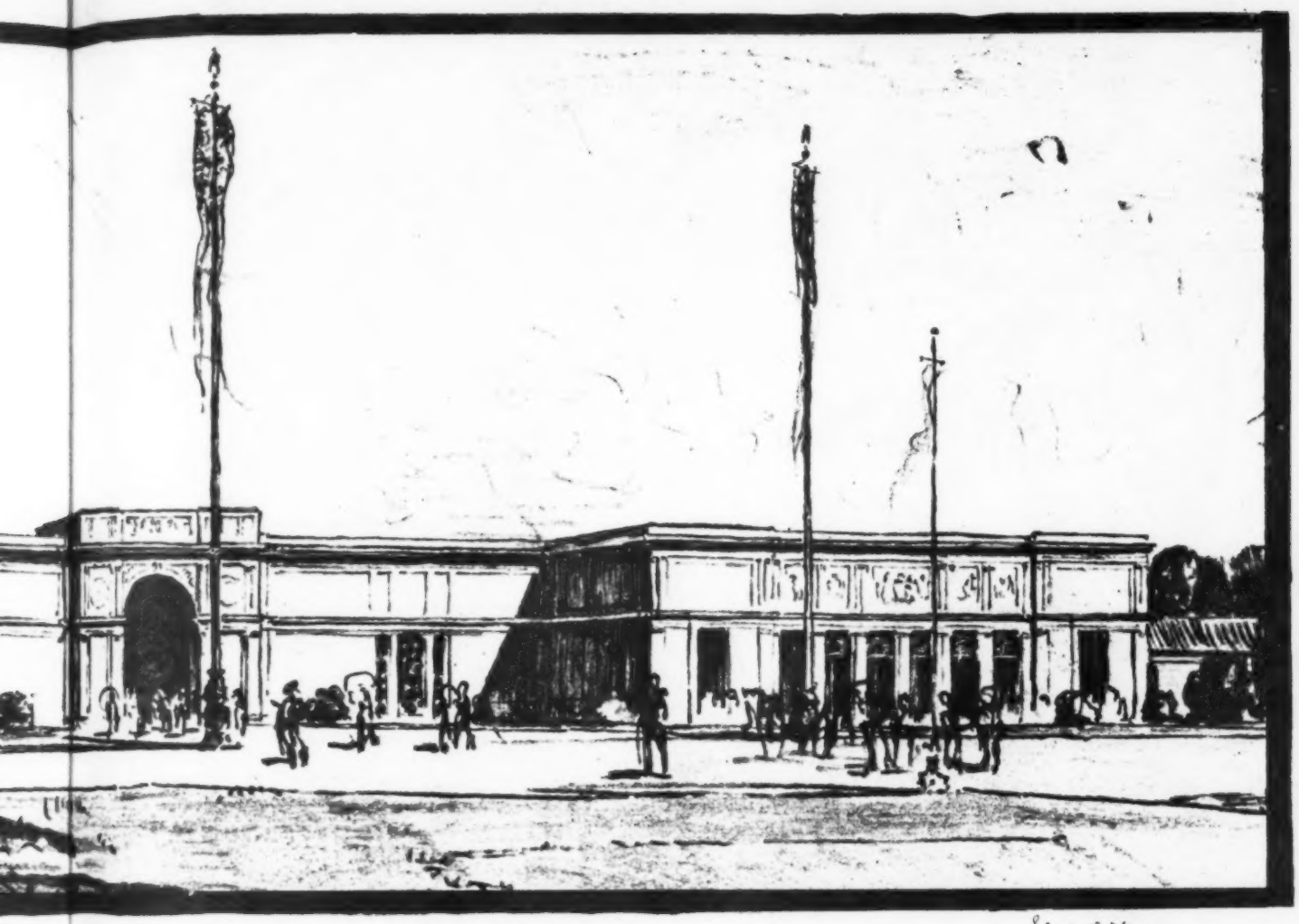
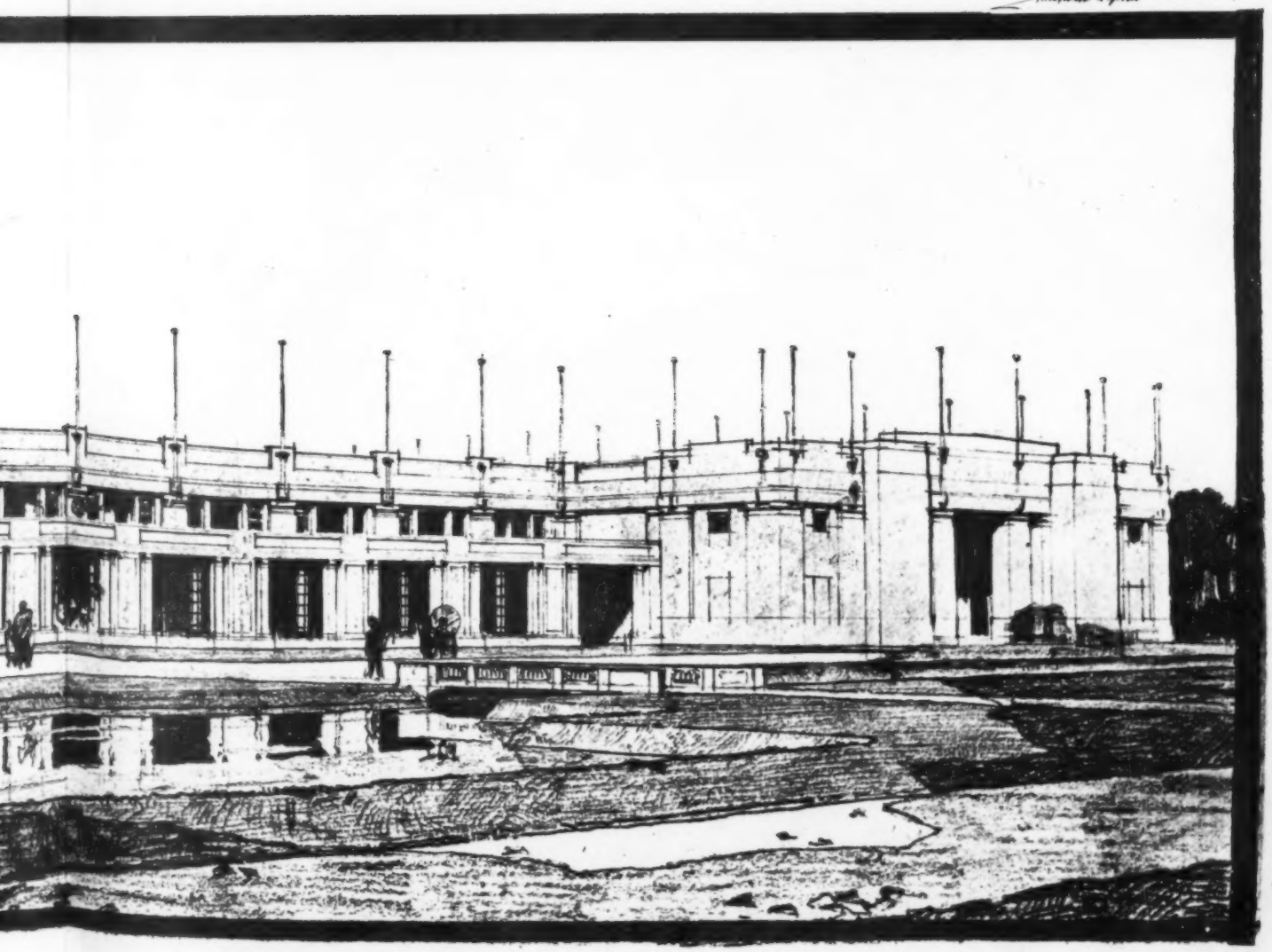
BRITISH EMPIRE EXHI

MESSRS. JOHN W. SIMPSON & MAXWELL





MPIRE EXHIBITION, WEMBLEY.

N & MAXWELL AYRTON, FF.R.I.B.A., ARCHITECTS.

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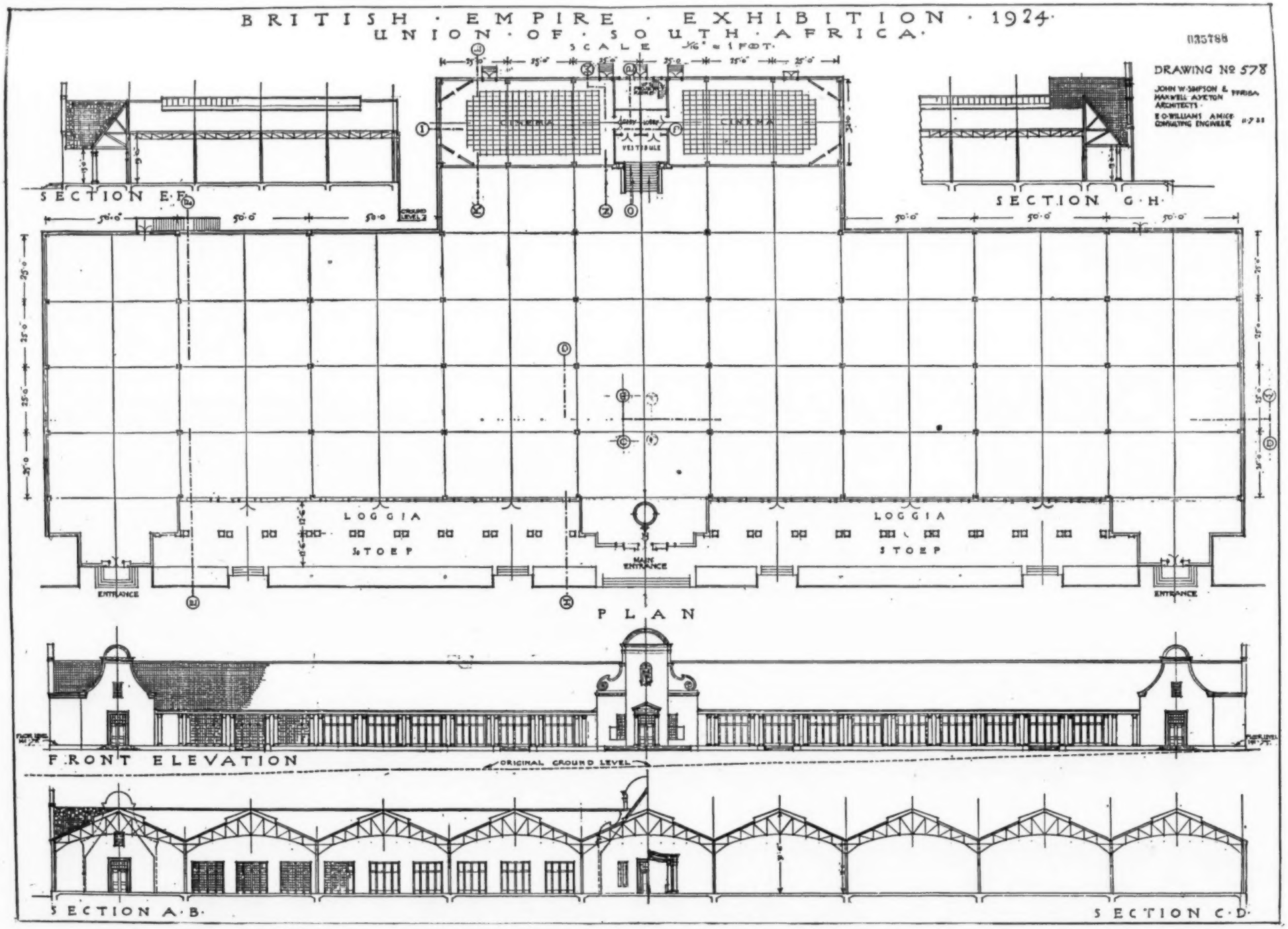
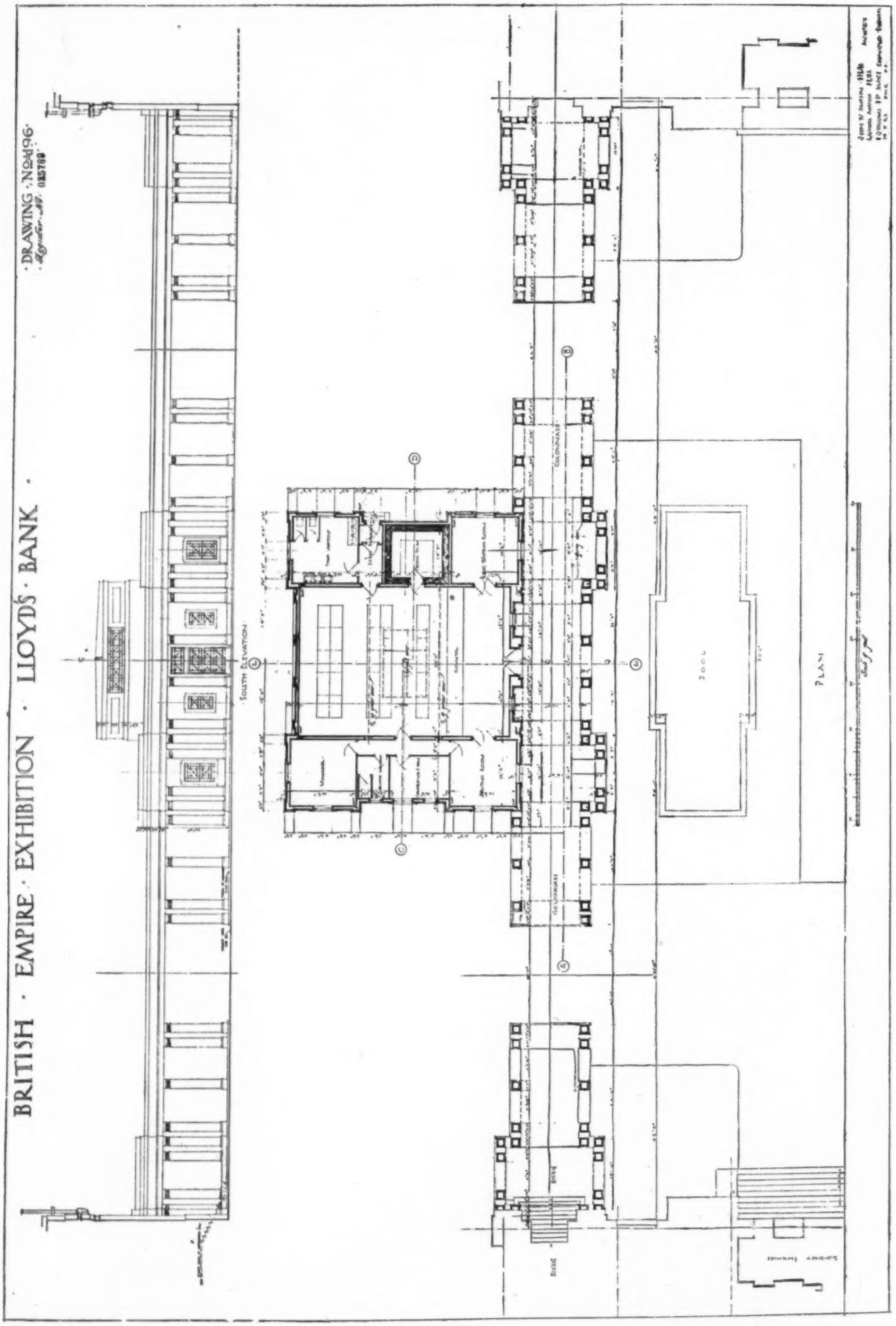
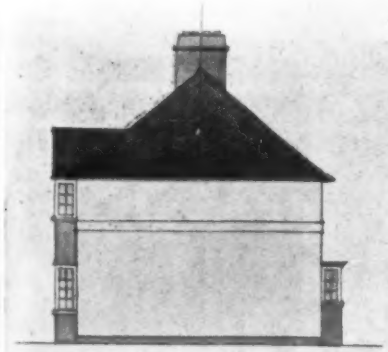


MESSRS. J. W. SIMPSON & MAXWELL AYRTON, FF.R.I.B.A., Architects.



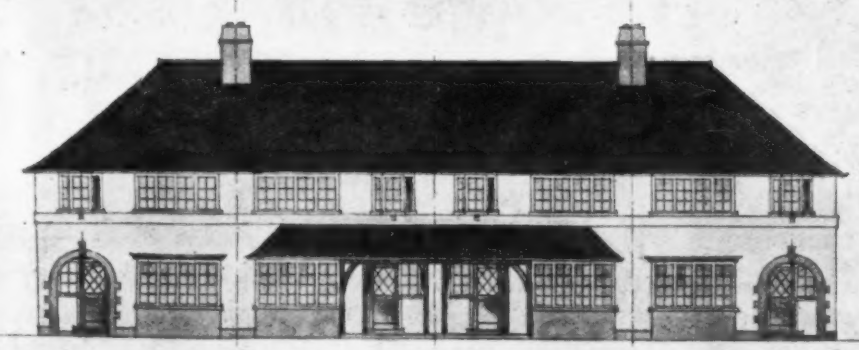
MESSRS. J. W. SIMPSON & MAXWELL AYRTON, FF.R.I.B.A., Architects.



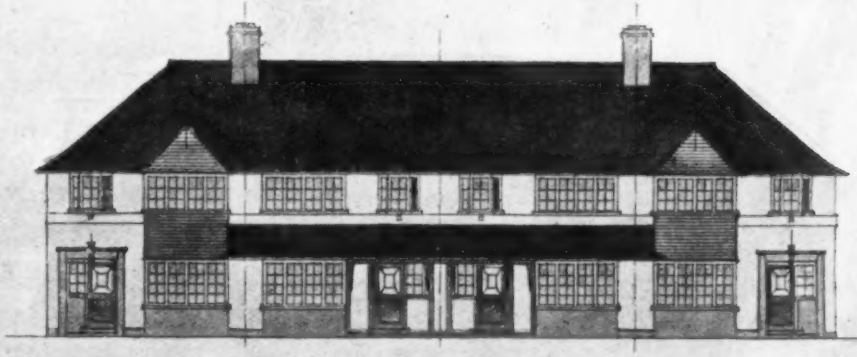
Side Elevation

Section

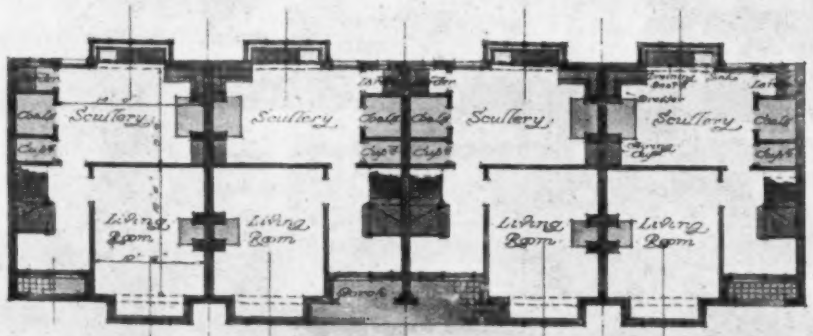
Garden Elevation



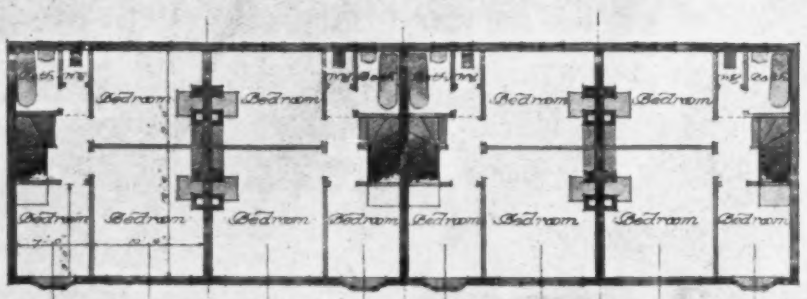
Front Elevation (Type A.)



Front Elevation (Type "B")



Ground Floor Plan



First Floor Plan

Housing Scheme at Purley. MR. CHAS. E. HANSCOMB, F.R.I.B.A. Architect. (*See p.* 216)

"Natsopa" House, London, S.E.1. MESSRS. HARDING & WILLIAMS, Architects. (*See p.* 216.)

ECONOMY IN BUILDING CONSTRUCTION.–I.

HINTS FROM AMERICAN METHODS.

By "THE JOURNEYMAN ARCHITECT."

IN the issue of *The Builder* of January 4th there appeared a letter from Mr. A. C. Shayler, of Ontario, Canada, that was very much to the point. Mr. Shayler hopes that "in time it will be discovered that there are methods of building comfortable and permanent houses other than all brick," and thinks "that those who are in authority and have to do with unemployment and housing shortage would do well to realise it."

It is an excellent letter, and by no means the least impressive feature of it is that it is not meant to be sarcastic. It is full of sound common sense advice, evidently gained first hand, and quite as evidently offered by one somewhat removed from our more conservative home atmosphere. In Canada and the United States, to advance an idea that is evidently practical and common sense is quite sufficient reason to gain a hearing. But with us there are many forms to be observed before this happy consummation is reached.

Here it may not be out of place to make reference also to the source of much that today passes for knowledge of America and things American. To have spent a month or so in being fêted in the main cities of the Eastern States and to have viewed the intervening countryside from the windows of a Pullman car seems to be accepted as quite sufficient justification for lecturing with authority upon the entire American continent, nationality, and customs. Nothing could be more erroneous, nor better devised to give the wrong impression. For whilst nothing pleases the American more than to fête the foreigner, especially if he comes to them as an accepted "big gun"—and in so far as the practice gives vent for the American love of excess it may be taken as indicative of American character—yet it is a vastly different thing to work by the side of the American and in competition with him. Only this way can one learn and appreciate the American. To travel from the Atlantic to the Pacific, working one's way from city to city with no more capital than a kindly Nature may have furnished and the drawing instruments customary to the class, is to be at once the journeyman architect, and to gain a knowledge of American methods that is real. To one who has worked in such a manner may be accorded the right to speak from first-hand knowledge.

The suggestion contained in the letter quoted—that timber construction should be introduced into England—is an excellent one; though perhaps to speak of the method as a revival would be the more correct definition, for timber construction is no new thing in England; nor, to be accurate, is the suggestion new. It is sometimes said that timber cannot be obtained at a price to render timber-built houses an economic possibility. This, in so far as timber from our main pre-war source—the Baltic—is concerned, is no doubt true for the time being. It is also true that the Canadians were accustomed to export their first quality brands. But what of the timber which they kept to use themselves in their cheaper class building—their third and fourth qualities? It has been said that the timber period is passed; that the supply is exhausted. Let me make the following imaginary comparison:—England and Scotland together could be comfortably dropped in the Canadian lakes and lost sight of. The Provinces of Quebec, Ontario, British Columbia, and part of Alberta, are each over three times the size of the Canadian lakes. Comprehensive surveys have been completed only for the Provinces of Nova Scotia and British Columbia—an inventory of the forest resources of Ontario is being completed, and extensive areas of forest land have been examined in the three prairie Provinces; but the information is still incomplete as to the total resources of these Provinces. For several years a thorough survey of the Crown lands of New Brunswick has been in process, and about 60 per cent. of these lands have been covered. As yet, only a relatively small portion of the forest area of Quebec has been reported on. Approximately one quarter of the land area of Canada is forest land, being 950,000 square miles, less than half of this carrying timber of merchantable size at the present time, and about one quarter carrying timber of 10 in. in diameter.

The table from the Forestry Report of the Department of the Interior of Canada given below shows the estimated stand of timber of merchantable size in Canada by regions:—

FIG. 1.—HOUSE IN BRITISH COLUMBIA.

Of the more Northern Provinces, perhaps no man knows the timber resources exactly, and certainly few can realise the immensity thereof. Perhaps the nearest that can be got to it is to think of all the thousands of acres one's mind is capable of picturing, and then write down a few more thousand on a piece of paper, for Canada's forests are estimated to contain eight hundred billion feet of commercial timber and one billion cords of pulp wood. And all that is required is sufficient timber to build a few thousand houses on a very small portion of a country that could be dropped out of sight in the Canadian lakes! Clearly there will be no shortage of timber until long after our needs are satisfied. It is not suggested that the adoption of timber construction should be anything more than a temporary measure to meet the need of the time though, indeed, to one who has lived in a timber-framed house, there will be evident many advantages. What is maintained is the proposition that if this form of construction be revived in England, and the framework and fittings be put together in the manner prevalent in the erection of the cheaper class of house in Canada and the States, then it will be found that the resultant house is an economic possibility, and one that will certainly endure for a time sufficiently long to see us past our period of need.

Region.	Saw-material.		Pulpwood, Cordwood, Posts, &c.	
SOFTWOOD.	1,000 ft. B.M.	1,000 c. ft.	1,000 cords.	1,000 c. ft.
Eastern Provinces	76,101,000	16,666,115	552,210	64,700,590
Prairie Provinces	17,985,000	3,938,715	272,010	31,825,170
British Columbia	345,762,000	75,721,878	47,500	5,557,500
Total	439,848,000	96,326,708	871,720	102,083,260
HARDWOOD.				
Eastern Provinces	32,134,500	7,037,430	209,815	20,342,417
Prairie Provinces	9,305,000	2,037,795	196,010	18,620,950
British Columbia	788,000	172,572	2,160	205,200
Total	42,227,500	9,247,797	407,985	39,168,567
Grand Total	482,075,500	105,574,505	1,279,705	141,251,827

FIG. 2.—SQUARE COTTAGE ON A RAISED BASEMENT.

It is possible that the details of construction may be looked upon as somewhat elementary—so they are. Elementary, rough and ready, even retrogressive; but does it matter so long as we get out houses? The type of construction referred to is that seen in the cheaper houses of the Western States, and it is possible that for overcoming a temporary difficulty and supplying a temporary need, a good deal may be learned by studying the methods of those who regard their residences much in the light of a temporary resting place than as a permanent abode. Also, when consideration is given to this it may appear that our domestic condition is becoming in some ways more like that of the American than it used to be. For instance, there is the domestic servant problem, or rather there is no longer any problem for some of us for there are no domestics. In this we are on all fours with the American. The middle-class Americans in the West do their own domestic work. It is only the rich have "help," and that Chinese,

who do not live in the house. The effect that this must have and does have upon the plan will be readily agreed; and to learn of the most suitably designed house for the saving of domestic work it would be difficult to find a better subject for study than the houses of those who do their own.

This is the pith of the whole matter, and the reason for the raised ground floor and semi-basement; and not, as is sometimes stated, the climate. For in many parts of the Eastern and Southern States, the older houses built when slave labour was obtainable have no basements. The origin of the basement is the saving of domestic work. The central hot-air furnace or boiler therein renders possible the doing without fireplaces; and everyone who has ever had anything to do with house-work knows for how much of it fires are responsible. By the introduction of a central furnace or boiler the housewife is saved from all connection with any fire except the kitchen range, and that not the tremendous affair we are cursed with in England. The man of the house attends, and only twice daily, to the furnace. That the central furnace is responsible for a considerable amount of dust is acknowledged; but this need not be so. With the system in vogue of open gratings to admit the heated air direct into the rooms, and with these gratings placed in the floors, also with the cold air intake from the outside on the ground level, a certain amount of dust is unavoidable. But it would be no difficult matter to place the gratings above the floor level, and to filter both the cold air at its intake and also the hot air at its exit in such a manner as would prevent most if not all dust. The dust, too, from a furnace mostly gathers in light fluffy balls which may be easily swept up, and is not like the dust from coal-ash, which settles well into and upon everything inside the room.

Hot-air furnaces, it is true, have been in this country made somewhat upon the lines of those in use in Canada and the States; but they were not readily taken up, though how far prejudice and how far the unadaptability of brick and stone walls to the housing of air-ducts entered into this failure it would be difficult to say. But as in the present instance the innovation is suggested only for temporary wooden houses, the latter objection does not apply. Another item which would militate against the use of the hot-air furnace in small quantities would be the initial cost of their manufacture; but were these to be manufactured in sufficient numbers to supply the houses required, that feature would disappear. In a later article it is proposed to detail the system of heating by hot-air furnace, and to supply estimated figures of cost, as the method is an important point in the consideration of the production of an economic house, which does not mean only a house that can be built at an economic cost, but also one that can be lived in at an economic rate both of money and domestic labour; the last two matters being points often overlooked.

But its inclusion materially affects both plan and elevation; and here at the very outset is a point of contention. We have grown used to our comfortable-looking cottages which nestle upon the ground, and we will have nothing to do with those perched-up affairs mounted upon a semi-basement half in and half out of the ground. The point is recognised and must be

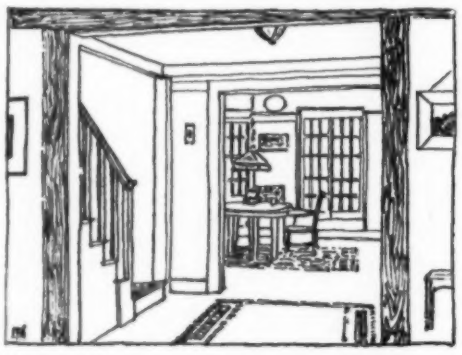


FIG. 4.—EFFECT GAINED BY SLIDING DOORS.

acknowledged to be a very decided detriment, architecturally, in the majority of American houses. The illustrations of a house in Victoria, B.C., and the small bungalow (Figs. 1 and 2) show this, like everything else in design, is a matter of proportion, and the basement need not of necessity be the cause of lack of proportion. A sloping site may be turned to advantage in the matter of the basement, and the square bungalow shows a type of the most economical of plans suited to the flattest of sites.

In the disposition of the rooms it is again the domestic service matter which controls the situation. The American desires to have things handy—a very natural desire when one has to fetch things for oneself. The kitchen must be handy to the dining-room if it be not the same, and the living-room may well be the hall. The effect of this is at once seen in the elevation in a compactness due to lack of disconnecting passages, and the result is a saving on the total cost, for the square plan is generally the most inexpensive to build, and the type adopted utilises space often wasted in hall and passages, as may be seen from the accompanying plan (fig. 3). Another feature having an effect both upon plan and cost is the sliding door between living-room, dining-room, and hall, where there is one (fig. 4). By this means is achieved economically a floor space, which space upon occasion may be quite large, but which may be subdivided into separate rooms, small but sufficiently spacious for the needs.

The added convenience of the service pantry interposed between the kitchen and dining-room is easily seen from fig. 5, and the saving of plumbing work is a matter of measurement. From this figure also may be gathered how, with knowledge, the American type of plan and construction may be made to suit our needs most advantageously.

Hofburg Extensions.

We understand that the scheme to place shop windows in the tunnel passage under the more ancient portion of the Hofburg is to be supplemented by a proposal to lease the entire ground floor, completed though unfurnished, of the new wing of the Palace (built as a residence for the Archduke Rudolf), as a restaurant with cafes and patisseries. While other portions of the wing are to house paintings and natural history objects which cannot find room elsewhere, the reception galleries of the upper stories are to be thrown open as reading halls and, in part, as extensions of the National Library.

The Roll of the R.A.M.C.

At the Victoria and Albert Museum (Room 72) may be seen the memorial roll of the four thousand odd officers and men of the Royal Army Medical Corps who gave their lives in the Great War. These 270 pages of lambskin contain in alphabetical order the names of them all, with rank, honours, and date of death; and they will be bound and deposited in the Chapter House of Westminster Abbey. Already there is a tablet to these men of the R.A.M.C. in the Abbey.

The roll was designed by Mr. Graily Hewitt, and was carried out by him and six assistants. Mr. Horace Higgins did practically all of the writing of the names, in black, with their honours in gold and the dates in red, the script being based by Mr. Hewitt on Italian fifteenth century, the main source of our modern printing types. At the head of each division by letter comes a sentence from the parable of the Good Samaritan, into the initial of which Mr. Reco Capey has painted a scene from the story. Opposite the title-page is painted a larger scene from the same parable, and below it is a figure of St. Luke, the beloved physician and artist, with his symbol, the ox. Next to the preface is a painted bust of Æsculapius, copied from the bust in the British Museum, set amid a vine.

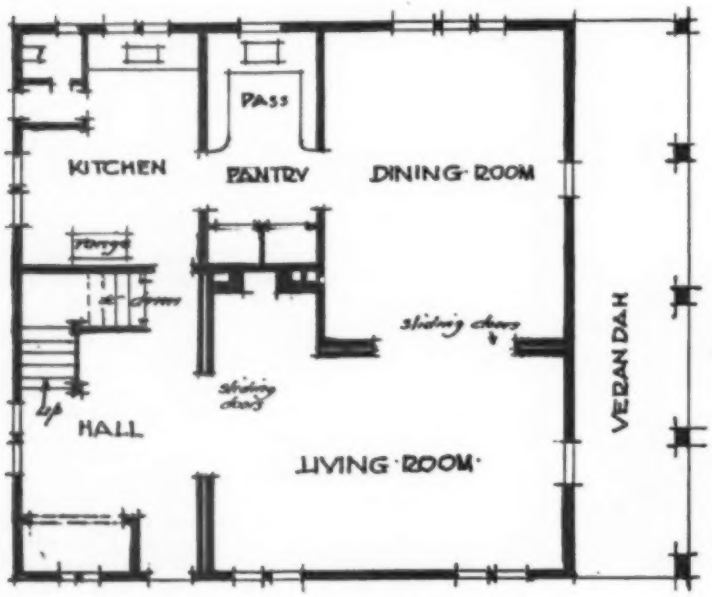


FIG. 3.—SQUARE PLAN: NO SPACE WASTED IN PASSAGES.

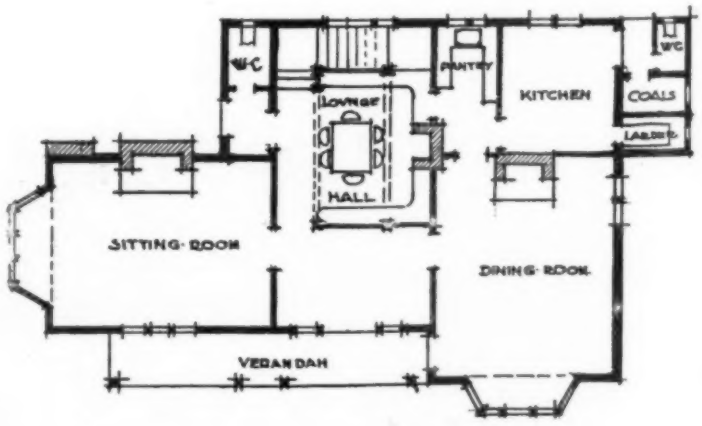


FIG. 5.—AMERICAN TYPE OF PLAN ADAPTED TO ENGLISH NEEDS: ALL IN FRAMEWORK EXCEPT CHIMNEY STACKS.

THE ARCHITECTS' AND BUILDERS' INQUIRY BUREAU.

Hot-Water Circulation Pipes.

SIR,—Your correspondent, "Student," should have no difficulty at all with his cylinder in the bathroom provided he runs his pipes on the correct modern method and puts his cylinder at a level higher than the door in question. It would not be worth while putting the cylinder on the floor of the bathroom owing to the difficulty of venting the pipes and the tremendous loss of heat. Why not put the cylinder in the kitchen in the ordinary way, enclosing and lagging it, and saving large expense? And why does he not buy Mr. Dye's excellent little book on "Domestic Hot Water"?

JOHN HIPKIN.

Poplar.

SIR,—"Student" must know that the whole principle of hot-water circulation is bound up in the rules of convection.

A body of water, if heated at the bottom, is set into circulation throughout its whole bulk owing to the rarified hot-water being replaced by the gravity of the denser cold water, and in turn as it cools to be replaced by other heated water. The hot water rises to the highest point it can reach uninterruptedly, and no further, falling again as it cools.

It is, therefore, necessary in any heating system or hot-water supply to allow for a continual unchecked rise to the highest point of the system and a further unchecked fall back to the source of heat. If this rule is transgressed without calling in the expensive aid of a force pump, the result is stagnation and failure as a system.

"Student's" door should not, however, prove an insuperable obstacle, even in a bungalow, though it is difficult to say definitely without seeing the plan and hearing all the facts of the case.

Surely the cylinder can be raised up sufficiently high to allow the adequate rise and fall between boiler and cylinder *over* the door. The rise and fall of the circulating pipes can then be arranged in the roof space, the pipes being well insulated and the supply points being served with as short "dead legs" as possible.

It is difficult to believe that the case in point cannot be designed to work admirably in some such fashion as this, unless I have entirely misunderstood "Student's" difficulty.

"READER."

Treatment of Oak.

SIR,—We shall be glad to know what is the best treatment for oak used externally in order to obtain the silver-grey effect common to old, weathered oak.

"ARCHITECTS."

Heating and Hot Water Supply.

SIR,—I am erecting a bungalow heated entirely by radiators, and am anxious to adopt a satisfactory system by which one small furnace and boiler will serve the heating system and hot water supply. I am aware of the objections to continual change of water in a heating system leading to the furring up of the pipes in time, and have examined several boilers in which a double jacket separates the water for the two purposes, but they are all too costly for my purpose.

Can any of your readers advise me of a method of treating the pipes in an inexpensive manner to solve the problem?

"LABOUR SAVER."

Smuts from Chimneys.

SIR,—The occupants of a two-story house (standing in its own grounds) erected 18 months ago, have been continuously inconvenienced by smuts descending externally from the chimneys and settling on window curtains and on all objects in the garden. The chimneys have 9 in. by 9 in. flues, and are carried up in roughcasted brickwork 2 ft. above the ridge of a fairly steeply pitched roof and have in addition 2 ft. pots. Good quality coal is burnt in the fireplaces and coke in the independent boiler. There are no hills or high trees anywhere near the building. Any suggestion as to the possible cause of the trouble or of a remedy would be very welcome.

"ARCHITECT."

Solid or Hollow Ground Floors.

SIR,—In your inquiry column of the 25th ult. the writer of the letter signed "N. B. H." says nine inches of concrete should be placed under ground floors; this is quite unusual and, I venture to say, unnecessary. I have put solid floors in cottages and have never heard any complaint about them and in all cases only 6 in. of cement concrete, including the top screed of coke breeze, was used.

Two points are of great importance: First, the damp course in the walls must be at least 3 in. below the floor level, or vertical damp-proofing will be required; second, the boards must be laid in a thick layer of tar, which must extend under the whole floor and must not be put down until the concrete is thoroughly dry.

I would like to draw special attention of those interested in this subject to the very dirty condition in which invariably the space under the joist floor on sleeper walls will be found to be.

D. A. FORSTER.

Weybridge.

Cost of Walls.

SIR,—In answer to "H. M. S.," 2½ in. and 3 in. terra-cotta partition slabs cost about 3s. and 3s. 1d. per yard super respectively, and can be erected at a cost of about 6s. to 6s. 6d. per yard super at the present time according to the quotations of reputable contractors.

Brickwork at £30 per rod reduced works out at about 6s. 7½d. per yard of 4½ in. work, so that it would appear that there is little difference in cost in ordinary cases.

Where, however, such division walls do not occur directly over solid bearings terra-cotta, in common with other lighter materials, has its advantage over brickwork and without the faults of coke breeze or cement concrete, like undue expansion and contraction or a hard surface conducive to condensation.

A 4½ in. brick wall, 8 ft. high, brings a load of 8 cwts. per foot super upon its base, while a terra-cotta partition of the same height imposes only 5 cwts. per ft. super in spite of its narrower width.

Where such partitions occur near the bearing of a floor it is quite safe to erect them off a plate direct on the wood joists of an ordinary floor, and in floors designed to take a live load of 2½ cwts. per ft. they could be erected in any position without additional support.

To sum up, for ordinary work on solid supports there is not much cheaper material of a fire-resisting nature than 4½ in. brickwork for partition work, and it is not worth while disturbing the even flow of bricklaying by the introduction of another material.

For work not having solid supports, terra-cotta has a distinct advantage over brickwork in the saving to be effected in steelwork, either by its elimination or reduced weight.

I trust this will satisfactorily answer "H. M. S.'s" query. "SURVEYOR."

Building Costs.

A factory of four stories would cost about half of the same floor area in a one-story building. I could give proof. HENRY LOVEGROVE.

SIR,—A friend of mine who read the letter by "Essex," in last week's number of *The Builder*, remarked to me that this was the old controversy of bungalow *versus* two-storied house cropping up again. I had to disagree with him in that; while a firm advocate of the two-storied house on the score of economy, I am equally convinced that in factory work it is far wiser to spread out on one floor with the same end in view.

Cost of land or the lay-out of shafting may determine otherwise; but it is an undoubted fact that the expense of heavy suspended floors is out of all proportion to that of a light roof covering over a similar area. The great strains induced by vibration are also reduced to a minimum where the machinery has a solid bed on the ground, and I have little doubt that, given cheap land, the one-storied factory is the thing.

"GROUND FLOOR."

A Slating Problem.

SIR,—What is the best method of laying slates on a boarded and felted roof for a windy site; pitch of roof 30 deg.? Being boarded it is, of course, not possible to point from below with lime and hair mortar after laying. I do not want the slates to rattle and perhaps therefore work loose, but to be firm, and also well supported besides at the top and bottom edges. Owing to inevitable irregularities slates not pointed are often only leaning on diagonal corners. Some specify that the slates be bedded in lime and hair mortar as laid. I dislike this as I find it keeps the roof almost permanently damp, the mortar retaining the moisture so long. I have been thinking of specifying that two small dabs of oil putty be put below the nail holes as laid (centre nailed) and the slate pressed down on same. Oil putty being slow setting should find its exact bearing and make a secure job. Would there be any objection in practice to this? Is there, for instance, any question of expansion and contraction to be considered to any appreciable degree with regard to slating?

I do not think this extra cost of puttying should exceed 6d. per yard.

I consider putty should be better than Portland cement, for being slow to set it would adapt itself to the exact size required to fill up the space; it would not crumble or powder, and, finally, would not hold moisture. I should be very pleased to have other readers' opinions and also any practical slaters'. If the problem has been treated differently and successfully from this manner I should also be interested to learn how.

"MANCUNIAN."

Manchester.

Carpenters' Company Certificates.

SIR,—I am desirous of sitting for the certificate of the Carpenters' Company for building construction.

Would you kindly let me know when and where I can apply for particulars with regard to the above? F. G.

REPLY.

Examination in Carpentry and Joinery held in November, and Building Construction and Sanitation in November. Last year's syllabus is available, and answers to questions are issued for the use of candidates. You are advised to apply for further particulars to the Clerk of the Carpenters' Company, Carpenters' Hall, London Wall, E.C.

Books Received.

MYTHS OF PRE-COLUMBIAN AMERICA. By Donald A. Mackenzie. (The Gresham Publishing Company, Ltd.). Price 12s. 6d. net.

MYTHS OF CHINA AND JAPAN. By Donald A. Mackenzie. (London: The Gresham Publishing Company, Ltd.). Price 12s. 6d. net.

THE EIGHTEENTH-CENTURY ARCHITECTURE OF BRISTOL. By C. F. W. Dening. (Bristol: J. W. Arrowsmith, Ltd.) Price £2 12s. 6d.

PRACTICAL DESIGN FOR BUILDING CONSTRUCTION—V.

AN ELEMENTARY EXPLANATION OF THE APPLICATION OF THE THEORY OF CONSTRUCTION TO PRACTICAL DESIGN.

By EWART S. ANDREWS, B.Sc., M.I.Struct.E., A.M.Inst.C.E.

SECTION I.—WALLS AND FOUNDATIONS (Continued).

Pressure on Base of a Reinforced Concrete Retaining Wall.

As a final numerical example upon the calculation of pressures on foundations, and one involving rather more complicated calculations than those which we have previously considered, we will take the case of a reinforced concrete retaining wall. This wall is illustrated in Fig. 8, and for the purposes of the calculation we may regard it as composed of the wall portion, A B C D, and the base portion, E F G H. The force tending to overturn the wall about the point H is the earth pressure P =9900 pounds, which acts horizontally in the line indicated. The forces tending to resist overturning are the following weights:—

(1) The weight of the wall portion, A B C D, acting through the centroid *a*, and equal to $17.75 \times 1.3 \times 144 = 3320$ pounds. (Reinforced concrete is taken as weighing 144 pounds per cubic foot.)

(2) The weight of the base portion, E F G H, acting through the centroid *b*, and equal to $10.5 \times 2.0 \times 144 = 3000$ pounds.

(3) The weight of earth, B C F J, taken at 110 pounds per cubic foot, acting through the centroid *c*, and equal to $18.3 \times 6.25 \times 110 = 12800$ pounds.

(4) The weight of the superload, B M J K, equivalent to 3.75 feet of earth, acting through the centroid and equal to $6.0 \times 3.75 \times 110 = 2480$.

Therefore the total stabilising weight *W* is equal to the sum of the above four weights, viz.:—

3320
3000
12800
2480

Total weight = *W* = 21600 pounds.

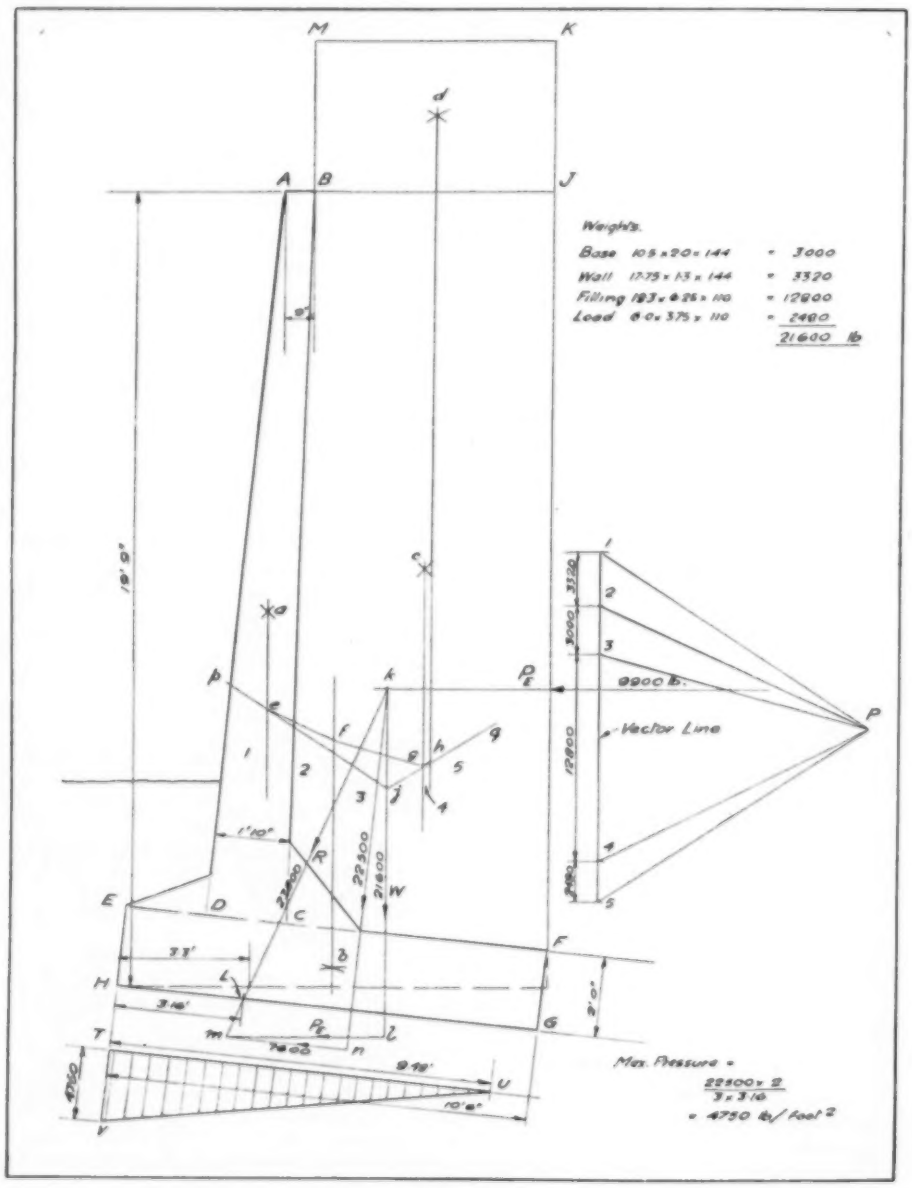


FIG. 8.

Graphical Construction for Position Line of Action of Total Weight.

We can find the position of the line of action of this total weight *W* by means of a graphical construction known as the link and vector polygon construction; this construction is the basis of the subject of graphic statics and will be employed in various forms in several of the problems yet to be considered.

We start by drawing verticals through the various centroids *a*, *b*, *c*, *d*, this giving the force lines, and we number the spaces between the force lines 1, 2, 3, 4, 5. This is often known as Bow's notation, and by means of it we designate a force line by the numbers of the spaces between which it comes; thus the first force line, the vertical through the point *a*, is called the line 1, 2; the next one through the point *b* being called 2, 3, and so on.

At some convenient point at the side of our diagram we draw a vector line parallel to the forces (vertical in our case), and to a convenient scale we set out lengths, 1, 2; 2, 3; 3, 4; 4, 5, to represent to scale the weight of the wall portion, A B C D, *i.e.*, 3320 pounds, and so on, as indicated on the figure. At some convenient place on one side of the vector line we then choose a "pole," *P*, and we join this pole to each of the points, 1, 2, 3, 4, 5 on the vector line. This pole can be chosen anywhere on either side of the vector line, and although the position of the pole affects the shape of the remainder of the diagram, it does not affect the result of the construction. The figure thus obtained by joining *P* to each of the points on the vector line is called the Vector Figure.

We now proceed to draw the link polygon, and start by drawing in space 1 a line *p e* parallel to P1, intersecting the first force line in the point *e*; we then draw a line *e f* across space 2 parallel to P 2, intersecting the second force line in *f*; then *f g*, across space 3 parallel to P 3. This construction is continued for every space, the line across the space being parallel to the line joining *P* to the point on the vector line bearing the same number as that of the space in question; these lines, *p e*, *e f*, etc., are called *links*, and the last link *h p* is parallel to the last "ray," P 5, of the vector figure.

In order to find a point on the face line of the resultant of all the weights we produce the first and last links, *p e*, *p h*, backwards until they intersect at the point *j*; we then know that the resultant load *W* passes through the point *j*. If we had taken our pole *P* at some other point our resulting link polygon would have been slightly different in shape, but the intersection of the first and last links would have come upon the same vertical line; if we had started our link polygon at some other point, the first link having been drawn anywhere across the first force line, the effect would have been to have shifted the whole link polygon vertically, but the result would have been the same.

We have now reduced the forces acting on the wall to two, viz., the resultant weight *W* and the horizontal earth pressure *PE*. To do this we first find the point *k* at which these two forces intersect, and we then set down to a convenient force scale a vertical line *k l* to represent *W* = 21600 pounds; we then draw *l m* horizontally to represent to the same scale *PE* = 9900 pounds, and by joining *k m* we find the resultant force *R* and the intersection of its line of action with the base *H G* gives us the load point *L*.

As the base *H G* is inclined to the horizontal we next have to find the components of the resultant *R* parallel to and at right angles or normal to the base. This is done by drawing *m n* parallel to the base, and *k n* at right angles to the base. On measuring *k n* to scale we find that it represents a normal pressure of 22500 pounds.

We are now in a position to calculate the maximum pressure on the soil and to draw the diagram of pressure on the soil. On scaling the length *H L* we find that it is 3.16 feet; this is less than one-third, and the load point, therefore, falls outside the middle

third, so that we have

Maximum pressure per square foot on soil

$$= \frac{2 \times \text{normal pressure}}{3\,H\,L}$$

$$= \frac{2 \times 22500}{3 \times 3.16}$$

$$= 4750 \text{ pounds per square foot.}$$

We then draw the pressure diagram as indicated by making the base of the triangle equal to three times $H\,L$.

In this example we have chosen the graphical method of solution because it is quite appropriate, and because it gave us an opportunity of introducing the link and vector polygon construction. We could have proceeded as in the last example by calculating moments about a suitable point and dividing by the total weight to obtain the distance of the line of action of the total weight from that point, and we should have obtained the same result.

Slide Resistance.

In the case of a structure which is subjected to horizontal as well as vertical forces such as the present we have to consider the resistance of the structure as a whole to sliding, as well as the intensity of pressure on the soil.

The component of the resultant pressure on the base, which tends to cause sliding, is represented by the length $n\ m$, which scales 7,600 lbs. This is resisted by two forces, (*a*) the pressure of the soil on the front of the wall from the top of the soil to the bottom of the base, (*b*) the natural friction between the base of the wall and the soil. This natural friction varies with the soil, and for concrete or clay is usually taken at from 0.4 to 0.8 of the normal pressure, according to the wetness of the soil. The total resistance from these two causes should not be less than about twice the sliding component of the pressure; it is usual to assume, as we have done, that the earth pressure acts horizontally, but experiments show that it acts at an inclination to the horizontal which will reduce the slide component so that the usual assumption errs in practice on the safe side.

ACOUSTIC DEMANDS IN AUDITORIUM DESIGN.

On Tuesday last week, at University College, London, Mr. G. A. Sutherland delivered an address on "Acoustic Demands in Auditorium Design." Mr. J. A. Gotch, P.R.I.B.A., presided.

The lecturer said there was in some quarters a feeling of resentment that anyone claiming to understand the application of the principles of acoustics to architecture should not be able to take an existing example of a recognised architectural design, and by the alteration of a few unimportant details make it a pleasant place in which to hear and speak. But it was no more possible to adapt the laws of sound than it was to alter those of mechanics—acoustic considerations must influence the whole of a design from the outset. The conditions of good hearing in an auditorium were first, uniform and adequate loudness; second, distinctness or freedom from undue overlapping of successive sounds; and third, accurate rendering, or the preservation of their proper relative proportions in the simultaneous components of a complex sound. Uniform loudness was associated in practice with the absence of curved walls—all whispering galleries owed their peculiar properties of concentrating sound in one or more places to the presence of curved walls, and the concentrations were most marked if the surfaces were curved in two directions at once. Special concentrations of sound in some places implied corresponding deficiencies elsewhere; thus we had non-uniform distribution of intensity. Concentrations existed with sustained tones even in rooms with flat walls, but were unimportant unless the room had a large number of walls. The conventional rectangular pattern might always be safely adopted for all but the largest halls. There was no standard of loudness, but as a practical guide in designing a hall or chamber it might be taken that provision should be made that every auditor should receive in the first fifteenth of a second after the direct sound reached him, not less sound than he would receive directly if he were situated 50 ft. from the speaker. There was no scientific basis for the choice of a distance of 50 ft., but the reason why one-fifteenth of a second was chosen was that sounds which struck the ear at intervals of time less than that were not distinguished as separate, but might be considered as adding up to form the initial sound, whereas sounds arriving later had the nature either of an echo or a diffuse prolongation of the original sound.

Sound was a form of energy, and when sound waves were started they continued to be audible until converted into another form of energy. A mere breaking up of sound waves by irregularities in the walls of a room was of no service in this respect, but their entanglement in porous materials of every kind produced so much air friction that the sound was soon converted into heat. In the case of a speaker standing on a level plane the sound waves spread out from him roughly in ever-widening hemispheres, and the lower portion of these waves served anyone who might be on the plane. If that plane were covered with people standing, the sound was absorbed by the first few rows, and those at the back heard nothing. Placing the people on seats in tiers, and putting the speaker on a platform, made a larger portion of the wave serviceable, and matters were still further improved by placing a wall behind the speaker to reflect forward the back portion of the wave. This gave roughly the form of the classic theatre. If we added side walls, back wall, and ceiling we had the general form of the modern auditorium. But by these additions we completely altered the character of the problem. In the classic theatre there might, in certain parts, be insufficient loudness, for the wall behind the speaker was the only reflector helping to reinforce the direct sound; but there was no lack of distinctness due to overlapping of successive sounds, for the sound of each syllable, having passed over the audience, was lost at once. But in a modern auditorium sound might be buffeted from surface to surface for some time before it disappeared, causing a slow decay or reverberation instead of an immediate disappearance of the sound of each syllable. This was bound to involve indistinctness. Reverberation was the commonest defect in the audience hall of to-day. In designing such a hall distinctness was more important than loudness, but in the case of music some blending and overlapping of successive notes was desirable. Ideally, separate halls should be used for speech and music, and even for different classes of music, since the desirable reverberation periods differed in the different cases; but where a hall was to be used for all purposes a compromise must be made. In practice, it was found that a hall primarily adapted for speaking might be used with success for music, if there were a good deal of wood panelling in the neighbourhood of the orchestra.

The lecturer showed by diagrams how rooms of different shapes and sizes produced echoes and reverberations, and explained how it was that these were not so bad in the case of slow speakers as in the case of rapid ones. Echoes and reverberations, he said, could be reduced by the use of sound-absorbing materials in the building itself, or in its furnishing; and he gave a table showing the effect of different substances. The best absorbent was an open window, for through an open window sound entirely escaped; but a full audience was almost equally effective, and it was a matter of common experience that it was generally easier to hear in a room when full than in the same room when empty. The smallness of an audience could be in some degree made up for by having upholstered seats.

The table of sound absorption efficiency showed, among other things, that, taking the open window as 1.000, an audience as ordinarily seated was 0.960. Jute felt 6.6 cm. (about 2½ in.) thick was 0.770. A tile specially manufactured for lining auditoria was 0.382. Brick, plaster, and glass were examples of substances that reflected sound; in the case of a brick wall 18 in. thick, set in cement, and painted with two coats of oil, the sound absorption efficiency was only 0.017.

The lecturer acknowledged his indebtedness to W. C. Sabine and to Jaeger, and told how the former's first experiments had consisted in finding out how the reverberation period of a given room had been lessened by the introduction of a particular type of cushion; the absorption power of that cushion was determined by finding what area of it was required to produce the same effect on reverberation in the room as was produced by one square foot of open window. Once this particular type of cushion had been standardised, the absorption power of other materials was found by comparison with it, and a table drafted which enabled calculation to be made in advance of construction. This table also made it possible to specify the remedy for an unsatisfactory room already built, assuming excessive reverberation was the fault. The general principle to be followed was to have hard, sound-reflecting substances near the speaker, and sound-absorbing material in the neighbourhood of the audience; the reflecting surfaces being arranged to throw the sound to the absorbent ones in as short a time as possible. If any wall was curved that was an obvious place for absorbent material.

Of echoes, the lecturer said that besides reverberation and the unevenness of distribution produced by curved surfaces, echo was the commonest fault in large halls. If the difference in path between the sound arriving directly and that reflected from a hard surface was greater than 70 ft., the reflected sound arrived more than one-fifteenth of a second after the direct sound, and unless greatly enfeebled by absorption was heard as a distinct separate sound, *i.e.*, an echo. Long reflections of this sort usually included the back wall, which was, therefore, a suitable place for absorbent material.

The lecturer concluded with a reference to council chambers. In the case of these he said it was necessary to aim at exceptional loudness and distinctness. First, the hall should be so arranged that a speaker, by merely turning in his place could have an uninterrupted view of the ears of every member of his audience, including the visitors and press men. This ruled out the possibility of overhanging galleries with potential speakers far underneath them. Second, surfaces should be so arranged that for every member of the audience there was some early reflected beam of sound to supplement the direct sound. The ceiling was the natural place to use for this purpose; but if this was to be a reflector its height must not be more than thirty-five feet. Otherwise it would produce reverberation or echo. The upper parts of walls, including the back walls of galleries, should be of sound-absorbing material. This would leave the ceiling free to act as a reflector for direct sound, but there would be no sound thrown from wall to wall and coming back from the ceiling after a long interval. In the ideal council chamber the whole floor should be carpeted, and gangways covered with specially heavy carpets laid on under-mats. The seats should be made of the most absorbent type of upholstery. Galleries should also have upholstered seats, and when not in use might be cut off by heavy curtains. Seats should preferably be arranged in some sort of hollow square formation, and should be raised slightly as they proceeded towards the walls.

THE BUILDING TRADE.

INDUSTRIAL STATISTICS, 1923.

AT the commencement of a new year we have usually considered the industrial statistics of the year that has passed, as they provide, when tabulated, a useful indication of economic conditions which have prevailed, and they contain some lessons which should be of future use.

Unemployment.

Unfortunately, perhaps the most dominant feature of 1923 was unemployment, and although the statistics show some decline, unemployment is like disease, the longer it continues the more serious it is for the patient, and no effort can be spared to combat it successfully. There is, however, nothing to be gained by ignoring any hopeful symptoms and in depressing the patient and, therefore, it is satisfactory to note that there is some reduction in unemployment as compared with twelve months ago.

It may be well in this connection to take the figures for two years, given in the *Labour Gazette* in respect of three classes, which we will table as under with the percentages of unemployed :—

	Insured workpeople.	Trade Unionists.	Workpeople registered at Exchanges.
December, 1921	16.2 ..	16.5 ..	1,886,000
December, 1922	12.6 ..	14.0 ..	1,408,000
December, 1923	10.7 ..	9.7 ..	1,174,000

Thus, in the two years, it will be seen that there has been a decline in the percentage of Insured workpeople unemployed of 5.5; of trade unionists, 6.6; and in the number of workpeople on the registers of the employment exchanges of 712,000, and thus matters are not at their worst, but as long as so large a number of workpeople are unemployed the problem of unemployment must continue to receive the most serious attention.

Trade Disputes.

In the two years mentioned above the difficulties attending employment were seriously increased by trade disputes, but in 1923 a marked improvement was shown in this respect, and we append a table for the three years 1921-3 :—

	Disputes.	Workpeople.	Working days lost.
1921	.. 763 ..	1,801,000..	85,872,000
1922	.. 576 ..	552,000..	19,850,000
1923	.. 611 ..	397,000..	10,642,000

It is earnestly to be hoped that when trade shows some revival it will not at once be checked in its progress by industrial disputes. In bad times the number of disputes is usually less, but immediately there are signs of revival, and before the effect is felt, industrial unrest revives also, at a time when strikes injure the workpeople and the community perhaps more than at any other period, for, as trade revives, contracts are placed here from abroad and those contracts can only be tendered for on the basis of existing conditions. If those conditions are changed by industrial disputes either the tender, if made, results in a loss, or contracts are cancelled under a strike clause, and as time is the essence of most contracts, contracts are placed in countries where industrial conditions are less disturbed, and the boom is lost and unemployment is increased. It has to be recognised that strikes and lockouts are like war, and should be the last thing resorted to and only in cases of dire necessity.

At no time can a lockout or strike be resorted to without a general set back in industry. The great coal strike came at the end of a period of better trade, and not at the beginning of a period of revival, but its effects were to precipitate the bad period and they may even still be felt. Conciliation in industrial disputes is the only way to prosperity, and a loyal observance of awards made with the concurrence of all parties concerned, or their representatives, must be inculcated.

A loss of even ten and a half million working days represents at the present rate of wages an immense sum in wages, somewhere about £6,000,000 at the least, and the purchasing power of those wages is lost, and indirectly affects the prosperity of the community. In the three years under review the loss in working days totals 116,364,000 working days, or between £58,000,000 and £60,000,000 in wages at a moderate estimate, and that at a time when foreign trade was practically non-existent and unemployment rife.

Wages and Cost of Living.

The three years under review were times of falling wages; the war had entirely upset the wages market, and the years 1919 and 1920 were years of increased rates of wages. The net result of changes in rates of wages is given in the *Labour Gazette* thus :—1919, increase £2,432,000; 1920, increase £4,797,000; 1921, decrease £6,026,500; 1922, decrease £4,211,000; 1923, decrease £309,400. The restoration of more normal conditions in the labour market is shown in connection with these figures, for in the years 1919 and 1920 the changes in rates of wages were all increases, no workpeople sustained a decrease. In 1921 some 80,000 workpeople experienced increased rates, but some 7,175,000 decreases. In 1922, 75,000 persons increases, but 7,633,000 decreases; but in 1923, 1,198,000 workpeople were affected by increases and 3,027,000 by decreases.

The cost of living figures for these years were as under, taking one month (December) in each year :—

1919	.. 125	per cent. above pre-war level.
1920	.. 169	" " " "
1921	.. 99	" " " "
1922	.. 80	" " " "
1923	.. 77	" " " "

Making allowance for the importance of the different industries, the *Labour Gazette* places the net reduction in ratio of wages in 1923 at about 3 per cent. of the ratios prevailing at the beginning of the year, and states that at the end of the year weekly full time ratio of wages averaged 65 to 70 per cent. above pre-war level.

It has to be remembered that the cost of living figures are based upon the actual standard prevailing in working-class families before the war: those were the days when fur coats and silk stockings were not included in the family budget, and we find a note in the *Labour Gazette* to the effect that, whereas in some families economies have been effected to meet the increase in prices, expecially where incomes have not been proportionately increased; on the other hand it is probable that in some families the standard of living has been raised where wages have been increased in greater proportion than prices. There can be little doubt that the whole nation, with the exception of those on very small fixed incomes, has so far failed to grasp the fact that, until trade is restored all the world over, there must be economy at home. Too much is being spent on luxuries and pleasure, and until international trade is revived the nations are really living on taking in their own washing, and unless more restraint is shown evil must result. The most urgent need of every nation is to restore its depleted capital, and until capital is restored and credit firmly established economy should be the watchword of the day. The money spent should be expended on reproductive work, or on works which will give some return by alleviating the burden of unemployment. Those bent on pleasure and luxury are fiddling while Rome is burning.

It may be noted that the average level of rents (including rates) of working-class dwellings is stated to have been about 50 per cent. above pre-war level at the beginning of the year, but to have fallen to about 47 per cent. by the close of the year owing to a decrease in rates.

Hours of Labour.

It is estimated that 334,000 workpeople had their normal working-hours increased in 1923 by an average of about one-third of an hour per week, whilst 9,500 had them reduced by an average of about 1½ hours per week.

The Building Trade.

In the Building Trade, 434,000 men were affected by alterations in rates of wages, the net result being a reduction of £67,900. In 1922, the figures were 518,000 workpeople and a net reduction of £392,000.

As regards hours of labour the effect of the arbitrator's award fixing hours in the summer season at 46½ and 44 hours at other seasons, unless the operatives agreed to work 44 hours all the year round, resulted in an increase of hours in December, as previously the hours generally worked in January and December in most districts had been 41½.

The year was marked by less disputes than the previous year, 54 as compared with 62, but more workpeople were affected—20,000 as against 8,000—with a loss of more working days, 384,000 as against 169,000.

LIVERPOOL HOUSING SCHEME.

Government Inquiry.

IN his first report Mr. J. Orchard (Government Inspector of Audits) on the Garston Housing scheme of the Liverpool Corporation, stated that the Economic Building Corporation, which contracted to build 2,000 houses on the site but did not complete the contract, has received £330,000 in excess of what they were entitled to for the work they had done.

A second report has now been issued by Mr. Orchard, in which it is stated that the Company had less than £40,000 capital for carrying out the contract. Arrangements were made for payment of the contractors on an outlay basis, 90 per cent. on wages and materials, and 50 per cent. on plant, and the evidence went to show, states the report, that the City Council were greatly and continuously overcharged under both these heads, and that the contractors' claims were inefficiently checked and examined by the City Corporation officials. The evidence, it is stated, went to show that the contractor's managing director was guilty of extravagance and that he drew personally large sums of money from the amounts received from the City Council for financing the contract.

In his formal findings the Inspector states :—

"(1) The certificates presented to the City Council contain items the price or quantity of which was overstated, and having regard to the size and number of the discrepancies it is difficult to take the view that this was the result of accident.

"(2) The Council officials did not examine these details with reasonable care.

"(3) That the Housing Director and Architect, Mr. F. W. Badger, was not only negligent but grossly negligent in his examination of the statements put forward.

"(4) That Councillor H. A. Booth received moneys from the Economic Corporation."

The Special Committee of the City Council appointed to deal with the matter has also issued a report, in which it states it is satisfied that mistakes have been made, and that the circumstances disclosed a lack of capacity on the part of the Director of Housing to direct the administration of so large a contract, the magnitude of the work being too great to be efficiently performed by the staff. The Committee recommends that the Housing staff be transferred to the City Engineer's Department, and that the title of the Director of Housing be changed to that of Housing Officer, with a reduction in salary from £1,500 to £1,200 per annum.

MODERN BUILDERS' MACHINERY.

By STAFFORD RANSOME.

No. IV. ELECTRICAL AND STEAM POWER.—Part 2. (*Cont.*)

The Group Drive.

In spite of the many advantages of the individual drive, and because of its limitations which I have already outlined, the "group" drive (or more usually a combination of the group and the individual drives) is more popular in builders' mills. The group drive, as its name suggests, is the driving of two or more machines from a motor-driven countershaft which is common to them all. This method, although it does not eliminate all shafting and belting, reduces them to a comparatively small matter, and it has the advantage of reducing the "collective" amount of horse-power in the mill. This, of course, is on the assumption that the whole of the machines will not be used at their full capacity simultaneously. It is, therefore, eminently suitable for a builder's mill when the work of the individual machine is usually intermittent. Thus by grouping three or four machines under one fairly large motor, and arranging so that they are not all worked simultaneously, the horse-power of the motor may be considerably below the collective power of the motors which would be necessary if the same machines were driven separately.

A Comparison of Powers.

For instance, by grouping, say, a saw-bench, which would require individually as a maximum 15 h.p.; a hand-feed planer, 4 h.p.; a mortiser, 4 h.p.; and a tenoner, 8 h.p.—total 31 h.p.—they could be driven quite well by a single motor of, say, 25 h.p., provided that not more than two or three of them were to be worked simultaneously, as their average demand for power at any one time, plus the necessary shafting, would not exceed the capacity of the motor. In times of great pressure of work, however, when it may be desirable to work every machine at full capacity, the group drive may have a retarding effect on output unless each group has been somewhat overpowered for the normal requirements. The paramount advantage of the group drive lies in the fact that the countershaft may always be speeded to suit the motor, irrespective of the nature of the current, as the speeds of the spindles are regulated by the diameters of the pulleys on the countershaft and the machine. There is a further advantage in the group drive, and that is, that the relative efficiency of the larger motors is far higher than that of the smaller ones. Consequently, the single large motor used for a group is more efficient than a number of smaller ones. This last, though a point to be borne in mind, does not affect the user of wood-converting machines as much as it does those in some other industries where the requirements for power of the individual spindles are far lower than those of these tools.

In weighing the relative advantages of steam and electricity, we must not fail to grasp the fact that to attain the best work from wood-working machines the most perfect cyclic conditions are essential. "Cyclic regularity" is the constant running at a regular and even speed, without acceleration or retardation, of a shaft or spindle. In this respect the electrical drive is far ahead of the steam engine, and the nearest approach to the ideal in this connection is attained by an individual motor coupled to a spindle and impelled by an alternating current.

Cyclic Regularity.

Without going deeply into the theory of the question I can perhaps convey my meaning in popular form by saying that, in the first place, a reciprocating steam engine, which is propelled by the letting in of steam first at one end of the cylinder and then at the other, *i.e.*, by a series of shocks, can never give a perfect cyclic regularity. The evil is reduced by the fly-wheel, which absorbs those shocks to a certain extent, but in their reduced form they are imparted to the shafting, and are always there. The cyclic irregularity thus occasioned is increased by the torsional effect of driving on the shafting, and the longer the shaft the greater will be the cyclic irregularity. All cyclic irregularity in the main shaft is imparted faithfully through the belts to the countershafts, and from them to the spindles of the machines, increasing progressively and accentuated by the slipping or "ballooning" of the belts.

With an internal combustion engine, such as a gas engine, the evil is worse because it is driven by an explosion at only one end of the cylinder, and it "free-wheels" during the return portion of its stroke when it is impelled merely by the momentum of the fly-wheel. The electrical drive avoids the greater portion of these irregularities, first, because there is no reciprocating movement to be overcome or neutralised; and, second, because it eliminates most, or, in the case of the individual drive, all of the shafting and belting. Again, I would emphasise the fact that a plant driven by electricity cannot be worked if it is underpowered. Thus, if the motors are not sufficiently powerful, they have to be replaced, and, if you add more machines you have to provide more or larger motors to drive them. Thus the motive power increases proportionately and automatically with the increase in the plant.

Under-Powered Factories.

Such is not the case with a steam-driven plant, which, owing to the great capacity of the good old steam engine for negotiating overloads long beyond its proper economic limits, will go on turning the machines round somehow long after it has been grossly overtaxed. Builders' shops, which usually grow progressively from small beginnings, are often underpowered by the steady increase in the plant without increasing the steam power behind it. Many times I have been called in to find the causes of certain troubles in such factories where there was nothing wrong but an insufficiency of power. Such a condition may well be a cause of serious loss in efficiency long before it becomes very palpable to the superficial observer in a shop where it has come about gradually. But it should reveal itself in the quality of the work, due to excessive cyclic irregularity, and in the abnormal increase in the fuel consumption, due to the engine being taxed beyond its economical point. By the time that the evil begins to show itself in the slowing and racing of the engine, which is obvious to everybody, it has probably long been in a bad way.

Alternative Plans.

For the purpose of contrasting the collective and the individual drives I show, by the courtesy of a well-known firm of wood-working engineers of Halifax,* alternative sketches demonstrating two of their lay-outs of a small builder's plant. Scheme "A" shows a plant driven collectively by a gas engine, through shafting and belting, and Scheme "B" shows each machine, with the exception of the two small sharpening machines which have one motor between them, driven by its own separate motor, and all shafting dispensed with. The machines in each case are the same, and consist of:—(1) a 32 in. circular saw bench with rising and falling table, for ripping and cross-cutting; (2) a 15-in. hand-feed planer; (3) a 24-in. panel planer; (4) a chain and hollow chisel mortiser; (5) a tenoning machine; (6) a vertical spindle irregular moulding machine; (7) a 30-in. plain band-saw; (8) a saw-sharpening machine; (9) a straight and moulding iron grinder. Both installations are shown in a building of the same size, except that in Scheme "A" the engine has to be housed in an annexe to the machine-shop, and, for convenience sake, the sharpening machines are also placed in the annexe. A glance at the two shows at once the great saving of space by the adoption of the individual drive in plan "B," as not only are the countershafts and the belts (which are above the floor in plan "A") eliminated, but all excavation to accommodate the main and other shafts below the floor and their belting are avoided. The plant "A" could equally well be driven by a steam engine, but in that case an extension of the building to accommodate the steam boiler and fuel store would be necessary.

If an electrical motor were used to drive the whole of the machinery by shafting as in Scheme "A," the annexe would be avoided as the motor could be placed below the floor in the main building. Whether the motive power used for Scheme "A" is a steam or gas engine or a single large motor, 30 b.h.p. would be amply sufficient for the requirements of the plant working under normal conditions, because all the machines would not be demanding their full power requirements at the same moment. If, however, a larger or smaller motor is desired, it is a comparatively easy matter to change it without loss of time. Such would not be the case with either steam or gas power. We must bear in mind, however, that, whatever the class of motive power may be used for plant "A," it has to deal with a constant load equal to about 5 or 6 b.h.p. for driving the shafting and belting, without reckoning the power absorbed by the actual machines. This is saved altogether by the individual drive in plant "B." In plan "B" there are eight motors with a collective capacity of rather over 40 b.h.p. Each machine has its own motor except the two sharpening machines, which share one between them, *i.e.*, they are "grouped" for driving.

In the case of the circular saw, the hand-feed planer, the panel planer, and the vertical moulder, the motors are coupled direct to the spindles, thus avoiding all shafting and belting except that the feed of the panel planer is driven by a small belt from the spindle. The band-saw spindle is not coupled direct, because its speed is too slow for the motor, so the motor drives it through reduction gearing. Similarly the mortising and boring and the tenoning machines, each of which has more than one spindle, are driven each by a motor coupled to its countershaft which drives the various spindles by belting. In both cases, however, these machines are self-contained, and their countershafts form a part of the machines.

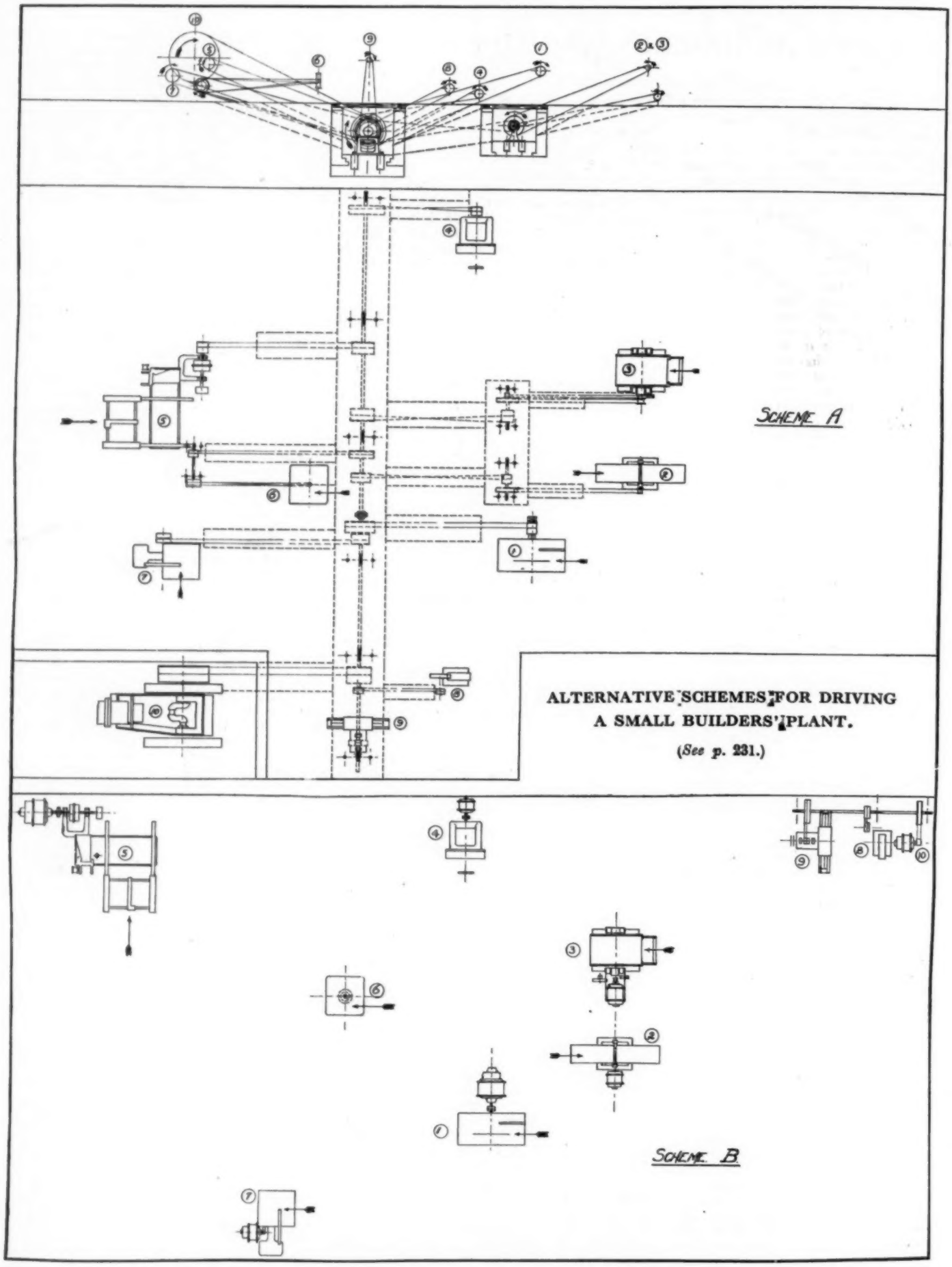
While the collective power required for plant "B" is considerably higher than that of plant "A," because each motor must be capable of driving its spindle to its full capacity for power consumption, the power absorbed by plant "B" for the amount of work done will, if anything, be less than that of plant "A." This is because, with the individual drive, the power is only used as and when required, and ceases entirely when a machine is out of work, whereas in plant "A" the main shafting and belts must go on absorbing power as long as any one of the machines is being used.

Except when the circular saw is being used for very deep cutting, it will seldom be found that the machines in plant "B" will be requiring more than 15 to 20 b.h.p. at any given moment.

There are also several minor but valuable advantages in the arrangement of the machines permitted by the individual drive, of which one may be mentioned. This is that in the general lay-out of a factory certain of the machines ought to work in parallel and others at right angles to each other to avoid turning the material.

Thus the ripping saws and the cross-cutting saws should be at right angles to each other, while all ripping saws should be parallel with each other. When driven from one shaft you cannot get a circular ripping saw and a circular cross-cut to work at right angles without the introduction of angle gearing, or an awkward arrangement of twist belting, both of

* Messrs. J. Sagar & Co., Ltd.



ALTERNATIVE SCHEMES FOR DRIVING A SMALL BUILDERS' PLANT.

(*See p. 231.*)

Key to the Machinery in Schemes "A" and "B."

SCHEME "A"—COLLECTIVE DRIVE, THROUGH TRANSMISSIONS.

1. Rising and Falling Table Saw Bench.
2. Hand Feed Planer.
3. Panel Planer and Thicknesser.
4. Chain and Hollow Chisel Mortiser.
5. Tenoning Machine.
6. Vertical Spindle Irregular Moulder.
7. Plain Band Saw.
8. Saw Sharpening Machine.
9. Planing and Moulding Iron Grinder.
10. 30 H.P. Gas Engine.

SCHEME "B"—INDIVIDUAL ELECTRICAL DRIVE.

1. As in Scheme "A," with 12 H.P. Direct-coupled Motor.
2. " " " with 3 H.P. Direct-coupled Motor.
3. " " " with 6 H.P. Direct-coupled Motor.
4. " " " with 3 H.P. Motor coupled to counter-shaft.
5. " " " with 7½ H.P. Motor coupled to counter-shaft.
6. " " " with 3 H.P. Direct-coupled Motor.
7. " " " with 3 H.P. Motor geared to saw pulley.
8. " " "
9. " " "
10. 3 H.P. Motor driving Items 8 and 9.

which are bad. A similar method must be employed if it is desired to get a circular and band-saw to work in parallel. With the individual drive, however, the proper relative positions may be attained without any complication. It will be seen that in Scheme "A" both the band-saw and the tenoning machine are fed at right angles to the rest of the plant. This necessitates the turning of the material. In Scheme "B," however, these two machines are turned so as to work in parallel with the others. Thus in Scheme "B," except that the ripping and cross-cutting happen to be done on the one saw-bench, the material throughout construction is never turned.

A Compromise.

In plans "A" and "B" I have shown the two extremes between the collective and individual drives. Between them, however, there is a compromise method which, up to the present, has been more usual than that shown by plan "B." This consists in grouping certain of the machines and driving others individually. A very ordinary method with the builders' plant illustrated would be to split up the driving of the machines as follows:—

Saw Bench	Separate Motor
Band Saw	Separate Motor
Hand Planer	One Motor
Panel Planer	
Moulding Machine	
Mortising Machine	One Motor
Tenoning Machine	
Two Sharpening Machines	One Motor

This method naturally necessitates a certain amount of shafting, but it is still a great saving on that required by plant "A."

In the abstract one may say, "When available, use electricity from the point of view of good work, good conditions, simplicity, saving of space and labour, and usually of economy." Further, it is desirable to get as near to the individual drive as circumstances will permit.

When we come down to a concrete proposition, however, this view may be modified, and each case must be treated on its merits. The electrical current may be unsuitable or its price prohibitive; the builder may have premises fitted with steam or gas power which are already available; or it may be policy to use up his refuse for fuel; or, in the case of a temporary job, he may have a portable or some other engine which comes in conveniently for the purpose. And, of course, over and over again there will be no electrical power supply at hand. Then he must fall back on steam or gas, but at the present day he must first regard the electrical drive as the thing to adopt either for a single machine or a large factory, unless there is some valid reason against it.

Perhaps the most popular factor in favour of electricity from a power supply source, from the point of view of the small man, is that, by obviating the cost of a motive power installation, he is able to use more of his capital on the actual productive machinery. In any case it permits him to make a start as a user of machinery to the extent of a motor and a saw-bench, on a capital expenditure of £100 or even less, whereas with steam or gas he would have had to spend several times that amount on the motive power and accessories alone.

Carmarthen Bridge.

The Ministry of Transport has condemned Carmarthen bridge as unsafe. It is a massive stone structure with seven arches. They recommend the construction of a new one. The bridge was originally built by the Romans, and is of considerable historical interest. In 1233 Henry de Turberville broke down the bridge when he relieved the town, which was being besieged by Richard Marshall, Earl of Pembroke. In 1250 it was broken by pressure of ice, the river being frozen in spite of the tide. In 1326 a toll was raised for the renovation of Carmarthen bridge. It was twice widened before the seventeenth century.

HOUSING, &c., ACT, 1923.

WE take the following extracts from a circular issued by the Ministry of Health. (It can be obtained from H.M.S.O., price 1d. net.)

I am desired by H.M. Government to refer to the previous circulars issued in connection with the Housing Act, 1923, and to invite the special attention of the Council to the wide powers conferred upon local authorities of assisting persons to become the owners of their houses and builders to undertake the erection of houses by the grant of loans or by giving guarantees to building societies.

I observe with satisfaction that local authorities generally have been active in setting on foot under the recent Act schemes for the production of small houses by private enterprise with the help of subsidies. I am convinced that the work done in this direction, by assuring the revival of private enterprise in house building, will have far-reaching effect in re-establishing the supply of housing accommodation.

The Government, however, feel that up to the present full advantage has not been taken by local authorities of their powers of assisting the provision of houses by making advances to intending owner-occupiers or builders or by entering into arrangements for guaranteeing part of the advances of building societies. Although the total amount of loans sanctioned by me for the purpose of such advances is already considerably in excess of the total of all loans sanctioned under the Small Dwellings Acquisition Act, 1899, prior to the Act of 1923, the local authorities who have availed themselves of their powers in this respect are relatively few in number and many local authorities have limited themselves to the adoption of a scheme for the grant of subsidy.

May I urge upon all local authorities the importance of making the fullest possible use of these powers? There is, I am convinced, a desire on the part of many members of the working class to become the owners of their own houses, and as the facilities are in existence I should like to see them utilised to the utmost. The experience of those local authorities who have in the past made use of the powers of the Small Dwellings Acquisition Act has been uniformly satisfactory.

The adoption of simple and easily understood arrangements for the grant of loans to builders will also be of the greatest value in facilitating the rapid development of house production.

THE MANAGEMENT OF TOWN PROPERTY.

A LECTURE on "The Management of Town Property" was given at the College of Estate Management by Mr. Sydney A. Smith, F.S.I., F.A.I., recently.

The lecturer considered the position of an agent to whom the management of a large town estate was entrusted and said the agent must first make himself quite familiar with the extent of his authority, which ought to be clearly set out in the instrument creating the agency. He must then inspect the estate and get to know its details, checking the properties from the rent roll.

The lecturer detailed some of the points which would require attention and examination, such as rents receivable, assessments, tithe rent charge, land tax, betterment rate. Some provision in regard to rising rents and terminable outgoings must be made well ahead by means of card index, or other such system, otherwise changes of this nature were apt to be overlooked. Subsequently the agent would have to keep in touch with local affairs if the estate were away from his district.

The necessity of looking around and seeing what the neighbours were doing was important so that future developments might be foreseen, and in some cases leases granted only for such times as would not prevent alteration in the nature of the property when ripe for it.

The need for firmness in enforcing covenants, especially in regard to outside painting, of being acquainted with local by-laws and the building Acts, and of a definite policy in regard to licences authorising changes in the use of the property was also emphasised. It was also important in letting properties to get a reasonable form of lease, and when this was done not to vary it in any way.

THE COST OF BUILDING.

MR. H. J. TURNER, of Birmingham, writes as follows in connection with the article on "The Cost of Building," by Mr. T. P. Bennett, F.R.I.B.A., in our issue for January 11:—

"SIR,—In connection with *The Builder* Cost of Building Competition specific queries were sent to 30 builders, the first of which was: 'Did the issue of bills of quantities cause an increase in the tenders?' Six builders replied in the affirmative. In considering the important points which issue from such an interesting competition as this has been, one cannot help but pause at Clause 18 in the summary, where it is stated that bills of quantities tend to increase the tender of the small house. Perhaps some of the builders who replied to this effect would give us their reasons for so doing. In my opinion a bill of quantities should tend to decrease the cost of any buildings providing a specification is prepared to meet the circumstances of the situation, which, in this particular case, may have been cut down a little and made somewhat leaner. The architects, in compiling the specification, specified materials which were perhaps too high a standard, and which would involve too high a standard of workmanship for a dwelling of which a thrifty working man could be the happy possessor, and thus help to solve one of the nation's problems. I have followed the articles, and have gleaned much helpful information, but there seems much more yet to be done towards solving the economical use of materials and methods of construction. Had several of the important suggestions been made prior to the issue of the bill of quantities the tenders would have been lower and the quantities would, as they were intended, have proved a great asset to the competing builders."

Mr. Bennett replies as follows:—

"In my opinion quantities increase cost of the work in small contracts for housing, particularly in country districts, because:—

"(*a*) Labour and other items are so small that they are, in many cases, almost unpriceable if separately enumerated.

"(*b*) Small builders are not accustomed to quantities and are in the habit of pricing the larger items to include the smaller.

"(*c*) The issue of quantities suggests that great care and elaboration have been expended in preparing the work and that a corresponding high standard of finish will be demanded.

"(*d*) Quantities leave no latitude to the builder to use a method of finish or detail which may be familiar to him or which for other reasons is cheap to construct.

"(*e*) Very small working builders who are not familiar with quantities are nervous of them.

"The following is an extract from a letter from a London firm in answer to my query as to whether quantities tend to increase cost of building: 'Yes, chiefly because the quantities were taken out in a fully descriptive manner, all labours being taken out separately. This always adds considerably to the price per house, and in this instance, where the conditions of the competition stated that the prize would be awarded for the most properly-priced bill, the price came out at a much higher figure than I would have contracted for to build the house, also because labour-only items are usually covered by the builder when pricing houses in his bulk items, such as on the price per rod of brickwork, per foot cube for timber, &c.' Other builders stated that quantities tended to increase the cost, but gave no reasons."

LONDON DECORATORS AND PAINTERS.

THE London Branch of the National Federation of Master Decorators and the London Branch of National Painters' Society, as represented by the Local Joint Education Committee, held a special meeting at the Y.M.C.A., Tottenham Court-road on the 24th ult. The object of the meeting was to entertain the successful candidates in the 1923 National Competition, organised by the National Joint Education Committee. About sixty students from the various Technical Institutes were present, all of whom had been successful in winning prizes, diplomas, or certificates in the competition.

Those present included Mr. J. P. Williams (President of the London Association), Mr. T. S. Rowden (Vice-President), Messrs. Lott, B. Morris, F. Fry, H. G. White, and E. Deacon (the Treasurer); Messrs. F. A. Colborne, A. Alright, W. Barrett, P. Phillip (National Painters' Society, London Branch); Messrs. T. P. Bennett, C. H. Eaton, J. Dawson (Northern Polytechnic); and Messrs. A. Everitt, L. Drinkwater and Jorden (School of Building).

Mr. Williams pointed out that there was much talk of the craft of the painter having fallen into decay, and that there was an excellent field and opportunity for all those who really studied their craft to do all that they could by improving their standard of craftsmanship to raise the status of the craft, and thus make it one of which that those engaged in it would really be proud. He deplored the absence of a very active member of the operative panel on the Local Joint Education Committee, Mr. J. Joyce, the operatives' organiser for the London district, and spoke of his enthusiasm and energy in regard to the question of technical education.

Mr. F. A. Cobborne spoke on the improved opportunity in the craft to-day, as compared with years ago, reminding the boys there was then no organisation for the education of the painter, whereas now they had a good organisation financed equally by operatives and employers alike. There was, he said, no excuse for any person in the craft being inexperienced, because throughout the country they had technical schools with staffs of expert teachers whose duties were to impart the hitherto hidden secrets to those who wished to know them.

Mr. Everitt said Principal Sage, of the School of Building, much regretted not being able to be present. The work of the Joint Education Committee was very much appreciated in the schools. He thanked the Federation for providing such a valuable incentive for the students in their work in the numerous money prizes, diplomas and certificates, and urged the students to continue their studies year by year, and by so doing raise the standard of craftsmanship, that the deplorable shortage of skilled craftsmen might be made good.

Mr. T. P. Bennett (Head of the Architecture, Surveying and Building Department, Northern Polytechnic) likened the progress of the student to a man on a journey; there were many hills to be climbed, but from time to time there was much to encourage in the excellent scenery in the hills and valleys. The students had hills to climb, and to-night was one of the periods when they obtained a view of the excellent scenery, but they must not delude themselves and think that it was the end of the journey, but be refreshed and encouraged thereby, gaining strength that they might continue to the end and produce the perfect craftsman of which to-day there was such a serious shortage.

Mr. Cecil Campbell urged the students to continue. The trade, through inefficiency, had fallen into a serious rut, but he had every confidence in the ability of the British craftsman to get out of it. This could be done by carefully regulated and systematic study. He was pleased to see so many young people were studying their calling, and had no doubt that before long things, by their influence, would be greatly improved, and that the master decorator would have no need to wonder whence he could obtain suitably skilled workers when suggesting schemes of decoration which were something more than washes of plain colour and white enamel.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Brick-layers.	C'p'ters, Joiners.	Plas-terers.	Slaters.	Plum-bers.	Painters.	Labourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Altrincham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashton-under-Lyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barrow-in-Furness	1/7½	1/7½	1/7½	1/7½	1/7½	1/7	1/7½	1/2½
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bath	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bedford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Birkenhead	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Birmingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bishop Auckland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bolton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bournemouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bradford	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Brentwood	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bridgwater	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Brighton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bristol	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burton-on-Trent	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cambridge	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chatham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Chelmsford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cheltenham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chesterfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Colchester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Crewe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Darlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Derby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Dudley	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/
Durham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
E. Glam.(Mon. Vall)	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Eastbourne	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Exeter	1/51	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Folkestone	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Gloucester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Grantham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Grays	1/8	1/8	1/8	1/8	1/8	1/8	1/	1/3
Grimsby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Great Yarmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Guildford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Halifax	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hereford	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½
Huddersfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hull	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ipswich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Lancaster	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leamington Spa	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Leeds	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leicester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Lichfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lincoln	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Liverpool	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
London	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3
Loughborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Luton	1/5	1/5	/5	1/5	1/5	1/5	1/5	1/0½
Maidstone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Manchester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Mansfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Merthyr Tydfil	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newport, Mon.	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Northampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Norwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Nottingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Oldham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oxford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Plymouth	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/	1/2
Pontypridd	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Portsmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Reading	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Rochdale	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Rochester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Rugby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
St. Albans	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
St. Helens	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Scarborough	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Sheffield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Shrewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southampton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southend-on-Sea	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stoke-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stroud	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4	1/0½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swindon	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½
Taunton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Torquay	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Tunbridge Wells	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wakefield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Walsall	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Warrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
West Bromwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Wigan	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Windsor	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/1½
Worcester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2½
York	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½

(For rates of wages in the Building Trade in Scotland, see page 243.

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

FEBRUARY 9.—**Ashford.**—SHEDDING, &C.—For erecting shedding, offices, stands, and other works for the Agricultural Show to be held at Ashford on July 10, 11 and 12, for the Kent County Agricultural Society. Major R. J. Bacon, secretary, Otham, Maidstone.

FEBRUARY 9.—**Blackpool.**—DEMOLITION.—For demolition and removal of Hoo Hill Villa, Bispham-road, for T.C. Mr. F. Wood, Borough Surveyor, Municipal Offices, Blackpool.

FEBRUARY 9.—**Dewsbury.**—HOUSES.—Erection of 56 houses, for the T.C. Borough Surveyor, Town Hall, Dewsbury. Deposit £1 1s.

FEBRUARY 9.—**Formby.**—HOUSES.—Erection of 26 houses, for the U.D.C. Mr. Ernest H. Bond, Clerk, Council Offices, Formby. Deposit £1 1s.

*FEBRUARY 9.—**Glyncorrwg.**—HALL AND INSTITUTE.—For erecting for the Hall Committee the proposed Workmen's Hall and Institute at Glyncorrwg. Mr. S. J. Morgan, Danyderi, Glyncorrwg, near Port Talbot. (* N.B.—February 9 is date by which names of builders wishing to tender should be submitted, *not* last date of tender.)

FEBRUARY 9.—**Onllwyn, near Neath.**—HOUSES.—Erection of 50 parlour type houses of two classes at Maesmarchog, Onllwyn, near Neath, with necessary roads and sewers in connection therewith, for Messrs. Evans & Bevan, colliery proprietors, Neath. Mr. J. Cook Rees, F.S., architect, Parade Chambers, Neath.

FEBRUARY 9.—**Radcliffe.**—HOUSES.—Erection of 56 workmen's dwellings, near St. Andrew's Church, for U.D.C. Mr. W. L. Rothwell, Surveyor, Council Offices, Radcliffe. Deposit £2 2s.

FEBRUARY 9.—**Sutton, Surrey.**—BANDSTAND.—Supply and erection of a bandstand in the Manor Park, Sutton, for the Sutton (Surrey) U.D.C. Surveyor to the Council, Municipal Offices, Sutton. Deposit £1 1s.

FEBRUARY 11.—**Barnes.**—CONVENIENCE.—For construction of underground sanitary convenience, for the U.D.C. Mr. G. Bruce Tomes, Surveyor, Council House, Mortlake, S.W. Deposit £1 1s.

FEBRUARY 11.—**Bishop's Stortford.**—SWIMMING BATH.—Construction of open-air swimming bath in reinforced concrete, for the U.D.C. Mr. Robert S. Scott, Surveyor, Council Offices, Bishop's Stortford. Deposit £2 2s.

FEBRUARY 11.—**Dunstable.**—OFFICES, &C.—For erection of additional offices, &c., at the Town Hall, for T.C. Mr. W. F. Wilkins, Borough Surveyor, Town Hall, Dunstable.

FEBRUARY 11.—**Durham.**—ADDITIONS.—For alterations and extensions to board room at the Poor Law Institution, for the Board of Guardians. Messrs. W. & T. R. Milburn, FF.R.I.B.A., 19, Fawcett-street, Sunderland.

FEBRUARY 11.—**Durham.**—FIRE ESCAPE STAIRCASES.—Fire escape staircases at the Poor Law Institution, for the Board of Guardians. Messrs. W. & T. R. Milburn, FF.R.I.B.A., 19, Fawcett-street, Sunderland.

FEBRUARY 11.—**East Preston.**—CONVERSION.—For the conversion of an existing building into a cottage at the Workhouse, East Preston, near Littlehampton, for the Board of Guardians. Particulars at Workhouse.

FEBRUARY 11.—**Glasgow.**—PAINTING.—For painting work at Queen Margaret Bridge, over the River Kelvin, for the T.C. Office of Public Works, City Chambers, 64, Cochrane-street.

FEBRUARY 11.—**Greenock.**—HOUSES.—For electric lighting, painting, and the laying of gas mains at the Cowdenknowes Housing Scheme, for the T.C. Mr. Andrew Nimmo, Town Clerk, Municipal Buildings, Greenock.

FEBRUARY 11.—**Ixworth.**—BRIDGE.—For the reconstruction of Potter's Bridge, Ixworth, in reinforced concrete, for the West Suffolk C.C. Mr. E. H. Bond, County Surveyor, Shire Hall, Bury St. Edmunds.

FEBRUARY 11.—**Kingston-upon-Thames.**—HOUSES.—Erection of 10 pairs of houses on the Housing Estate, for the Corporation of the Borough of Kingston-upon-Thames. Borough Surveyor, Town Hall, Kingston-upon-Thames. Deposit £1 1s.

*FEBRUARY 11.—**Leek.**—HOUSES.—Erection of twenty-two parlour and twenty-two non-parlour houses on land in Junction-road, for the Leek U.D.C. Mr. A. E. Beacham, Surveyor to the Council, Town Hall, Leek.

FEBRUARY 11.—**Liskeard.**—REPAIRS, &C.—For the adaptation and repair of farm buildings and cottages at Trenant Farm, near Liskeard, for the Cornwall C.C. County Land Agent, Truro. Deposit £1 1s.

FEBRUARY 11.—**London, S.W.19.**—HOUSES.—Erection of 5-roomed houses, 12, 24, or 87 in number, on the Council's Housing Estate, Toynbee-road, Burstow-road, and Dennis Park-crescent, within the Borough, for the Corporation of Wimbledon. Borough Engineer and Surveyor, Town Hall, Wimbledon. Deposit £2 2s.

FEBRUARY 11.—**Manchester.**—PAINTING.—For painting the interior of the Crumpsall Branch Library, for the T.C. City Architect, Town Hall, Manchester. Deposit 10s. 6d.

FEBRUARY 11.—**Mexborough.**—HOUSES.—Erection of 32 houses in Adwick-road, for U.D.C. Mr. G. F. Carter, Surveyor, Council Offices, Mexborough. Deposit £1 1s.

FEBRUARY 11.—**Mitcham.**—PUBLIC CONVENIENCES.—Erection of public conveniences on the Upper or Fair Green, Mitcham, for the U.D.C. The Surveyor, Broadway House, Mitcham. Deposit 10s. 6d.

FEBRUARY 11.—**Mountain Ash.**—WALL.—For the erection of a boundary wall at Miskin Recreation Ground, for the U.D.C. Mr. W. G. Thomas, Surveyor, Town Hall, Mountain Ash.

FEBRUARY 11.—**Newcastle-on-Tyne.**—EXTENSION.—Erection of a bathroom and scullery at the entrance lodge, banqueting hall, Jesmond Dene, for the T.C. City Engineer, Town Hall, Newcastle-upon-Tyne.

FEBRUARY 11.—**Paisley.**—OFFICES.—Erection of new administrative offices, for the Renfrewshire Education Authority. Mr. J. Hamilton Pullar, Executive Officer, County Education Offices, 28, High-street, Paisley. Deposit 10s.

FEBRUARY 11.—**St. Cleer.**—HOUSE.—Erection of house at Treworrick, St. Cleer, for Mr. E. Hoskin. Mr. E. C. Higman, architect, Liskeard.

FEBRUARY 11.—**Selby.**—HOUSES.—Erection of parlour and scullery houses in Haig-street. Messrs. Blenkinsopp & Scatchard, architects, Park-street, Selby.

FEBRUARY 11.—**Sheffield.**—HALL, &C.—Erection of assembly hall and class-rooms at De la Salle College, Scott-road. Mr. J. E. Whitehead, architect, 34, Goddard Hall-road, Sheffield.

FEBRUARY 11.—**Walsall.**—HOUSES.—Erection of 71 houses of various types, for the T.C. Mr. J. Taylor, Borough Surveyor, Council House, Walsall. Deposit £1.

FEBRUARY 11.—**Windsor.**—BOILER HOUSE, FIRE-BRICK LINED CHIMNEY, &C.—Construction of boiler house, foundations and setting of Cornish boiler, fire-brick lined chimney, and sundry builders' work in attendance on Engineers, for the Guardians of the Windsor Union. Mr. Walter W. Nobbs, M.I.Mech.E. (the Consulting Engineer in charge of the works), of 50, Fairhazel-gardens, N.W. 6.

FEBRUARY 12.—**Edmonton.**—PAINTING.—For painting works on various buildings of the Council, also the work of flooring over swimming bath, for U.D.C. Mr. C. Brown, Engineer of the Council, Town Hall, Edmonton.

FEBRUARY 12.—**Erith.**—SCHOOL.—For the reinstatement and erection of additions at Crescent-road, for the U.D.C. Mr. Harold Hind, Architect, Council Offices, Erith. Deposit £1.

FEBRUARY 12.—**Filey.**—SHELTER AND WALL.—For construction of a shelter and cafe, Crescent-gardens, and retaining wall and steps, Foreshore-road, for U.D.C. Mr. B. H. Noble, Surveyor, Council Offices, Filey. Deposit £2 2s.

FEBRUARY 12.—**Horsham.**—HOUSES.—Erection of eight houses in two blocks of four each in Ifield-road, Crawley, for the Horsham R.D.C. Mr. W. R. Guildford, Surveyor to the Council, Albion-terrace, Horsham. Deposit £1 1s.

FEBRUARY 12.—**Pontardawe (Glam).**—TWENTY HOUSES.—For erecting for U.D.C. twenty houses at Clydach Site, Pontardawe. Mr. E. D. Jones, Architect, Council Offices, Pontardawe. Deposit £3.

FEBRUARY 12.—**Reigate.**—PUBLIC CONVENIENCES.—For various works required in the construction of public conveniences in the Market-square, Reigate, for the T.C. of the Borough of Reigate. Borough Surveyor, Municipal Buildings, Reigate.

FEBRUARY 12.—**Rutland.**—REPAIRS, &C.—For repairs to Essendine School, near Stamford, for the Education Committee. Mr. F. W. Nichols, Surveyor, Market-place, Oakham.

FEBRUARY 12.—**Sunderland.**—CONVENIENCES, &C.—Construction of (a) underground conveniences Burdon-road, (b) convenience and shelter Kayll-road, (c) conveniences Burn Park, and (d) conveniences Fish Quay, for the T.C. Borough Engineer, Town Hall, Sunderland. Deposit £2 2s.

FEBRUARY 12.—**Uppingham.**—REPAIRS, &C.—For repairs to Caldecott School, near Uppingham, for the Education Committee. Mr. F. W. Nichols, Surveyor, Market-place, Oakham.

FEBRUARY 12.—**Wallingford.**—REPAIRS.—For repairs to Casual Ward buildings, for the Board of Guardians. Mr. F. G. Sainsbury, architect, Reading.

FEBRUARY 13.—**Littlehampton.**—ALTERATIONS.—For alterations and additions to the Town Offices. Surveyor, Town Offices, Littlehampton.

FEBRUARY 13.—**Newbury.**—HOUSES.—Alternative tenders for (a) 12 houses, or (b) a pair of houses for the Corporation on a site at Essex-street. The Borough Surveyor's Office, Municipal Buildings, Newbury.

FEBRUARY 13.—**Newton Abbot.**—SHEDS.—Erection of coal and van sheds, &c., for the Newton Abbot Co-operative Society. Offices, Newton Abbot. Deposit £1 1s.

FEBRUARY 13.—**Nottingham.**—ALTERATIONS.—For alterations in the Police Department at the Guildhall, for the T.C. City Engineer, Guildhall, Nottingham. Deposit £1.

FEBRUARY 13.—**Oakham.**—COTTAGES.—Erection of three bungalow cottages in Station-road. Mr. F. W. Nichols, Market-place, Oakham. Deposit £1 1s.

FEBRUARY 13.—**Pershore.**—BRIDGE.—Construction of a new bridge over the River Avon, to be carried out in ferro-concrete, for the Worcestershire C.C. Mr. C. F. Gettings, County Surveyor, 30, Foregate-street, Worcester. Deposit £5.

FEBRUARY 13.—**Pontardawe.**—VARIOUS WORKS.—For supply to the Pontardawe R.D.C. of: (*a*) Road metalling in such quantities as Council shall desire in period ending March 31, 1925. Quotations wanted for delivery to railway stations at seven points in the area; (*b*) ironmongery and building materials to be delivered to various specified localities; and for (2) haulage of materials, mud and dust, &c., with separate tenders for each district; (3) removal of house refuse, &c., separate tenders for each district required. For *a* and *b*, Mr. B. I. Phillips, Surveyor, Council Offices, Pontardawe, and 2 and 3, Mr. A. E. Edmunds, Sanitary Inspector, Pontardawe.

FEBRUARY 13.—**Shrewsbury.**—HOUSES.—Erection of 20 houses in Sultan-road, for T.C. Mr. A. W. Ward, Borough Surveyor, Guildhall, Shrewsbury.

FEBRUARY 13.—**Slaithwaite.**—HOUSES.—Erection of two semi-detached houses in Longlands-road. Mr. A. Shaw, architect, Golcar.

FEBRUARY 13.—**Torquay.**—HOUSES.—For the erection of 25 houses on the Stentiford Hill Quarry site, for the T.C. Borough Surveyor, Town Hall, Torquay. Deposit £2 2s.

FEBRUARY 13.—**Wembley.**—CONVENIENCE.—For the construction of a public convenience at Wembley Green, for the U.D.C. Mr. Walter H. Lewis, Acting Engineer, Council Offices, Wembley. Deposit £2 2s.

*FEBRUARY 14.—**Chingford, E.4.**—DWELLING HOUSES AND SHOP.—For work, labour and material necessary for erection and completion of five brick dwelling houses and a shop. Mrs. Hackshall, 9, Salisbury-gardens, Chingford, E. 4.

FEBRUARY 14.—**Dewsbury.**—ENGINE HOUSE.—For masons' and plasterers' work required in the construction of an engine house and engine bed at Batley Carr Mills. Messrs. Kirk, Sons & Ridgway, architects, Market-place, Dewsbury.

FEBRUARY 14.—**Golcar.**—HOUSE.—Erection of a dwelling-house in Leymoor-road, Golcar. Mr. A. Shaw, architect, Golcar.

FEBRUARY 14.—**Liverpool.**—TRANSFORMER STATION.—For the erection of a transformer station, St. Anthony's-road, Blundellsands, for the T.C. Land Steward and Surveyor (Architectural Department), Municipal Buildings, Liverpool. Deposit £2 2s.

FEBRUARY 14.—**Lower Cwmtwrch (Pontardawe).**—HOUSE.—Erection of a house at Lower Cwmtwrch. Mr. James Martin, "Crofton," Lower Cwmtwrch, near Pontardawe (Glam).

FEBRUARY 14.—**Manchester.**—EXTENSIONS.—For extensions to maids' bedrooms at Baguley Sanitorium, for Public Health Committee. City Architect, Town Hall, Manchester. Deposit £1 1s.

FEBRUARY 14.—**Meltham.**—HOUSE.—Erection of a dwelling-house in the grounds of Colne and Holme Joint Hospital, for the Committee. Messrs. J. Berry & Sons, Market-place, Huddersfield.

FEBRUARY 14.—**Near Bridgend.**—HOUSES, &C.—For carrying out for the Penybont R.D.C. the following works:—(1) Erection of 12 parlour type houses at Pencoed; (2) construction of a road and sewer at Pencoed; (3) erection of 8 non-parlour type houses at Pencoed; (4) erection of 12 parlour type houses at Llangynwyd; (5) erection of 8 non-parlour type houses at Llangynwyd; (6) construction of two roads at Llangynwyd. Engineer to the Penybont R.D.C., 8, Wyndham-street, Bridgend. Deposit £2 2s.

FEBRUARY 14.—**Salisbury.**—HOUSES.—Erection of 50 houses on the Wain-a-long Road Housing Site, for the T.C. Mr. W. J. Goodwin, Surveyor, Municipal Offices, Salisbury. Deposit £2 2s.

FEBRUARY 14.—**Sligo.**—CUSTOM HOUSE.—For reconstruction of Sligo Custom House, for Commissioners of Public Works. Mr. J. J. Healy, Secretary, Office of Public Works, Dublin. Deposit £1.

FEBRUARY 15.—**Carlisle.**—WALL, &C.—For construction of a retaining wall and certain works in connection with railway siding, for the T.C. Mr. H. C. Marks, City Surveyor, 18, Fisher-street, Carlisle. Deposit £1 1s.

FEBRUARY 15.—**Doncaster.**—HOUSES.—For the erection of 46 houses of various types on Norton Housing Estate, for the R.D.C. Mr. T. H. Johnson, Architect, 20, Priory-place, Doncaster. Deposit £2 2s.

*FEBRUARY 15.—**Dorset.**—HOUSES.—Erection of police houses at Chattistock, Corscombe and Bishop's Caundle, for the Dorset County Council. County Architect, County Offices, Dorchester.

FEBRUARY 15.—**Honley.**—HOUSE.—Erection of a detached residence at Ryecroft, Honley. Mr. J. Ainley, architect, 3, Chapel-hill, Huddersfield.

FEBRUARY 15.—**Leyton.**—PLAYSHEDS.—Erection of two playsheds at Cannhall-road School, for U.D.C. Mr. J. H. Jacques, 61, West Ham-lane, Stratford, E. 15. Deposit £1.

FEBRUARY 15.—**Moldgreen.**—HOUSE AND SHOP.—For erection of a house and shop at Moldgreen. Mr. E. Sharp, architect, Standiforth Farm, Dalton.

FEBRUARY 15.—**Portadown.**—CHAPEL.—Erection of a new chapel adjoining the Convent of the Presentation Order, Portadown. Mr. Albert E. Brooks, quantity surveyor, 17, Chichester-street, Belfast.

FEBRUARY 16.—**Alderley Edge.**—HOUSES.—Erection of eight cottages at Heyes-lane, for the U.D.C. Mr. H. Sheldon, Architect, Council Offices, Alderley Edge. Deposit £2 2s.

FEBRUARY 16.—**Altofts.**—HOUSES.—Erection of four scullery houses, for the U.D.C. Mr. T. H. Hailstone, Surveyor, Council Offices, Altofts, near Normanton. Deposit £1.

FEBRUARY 16.—**Bexhill.**—HOUSES.—Erection of 35 houses upon the London-road site, for the Corporation of Bexhill housing scheme. Mr. George Ball, A.M.I.C.E., Borough Engineer and Surveyor, Town Hall, Bexhill. Deposit £1 1s.

FEBRUARY 16.—**Bridlington.**—SHELTERS.—For erection of shelters on the Beaconsfield Sea Wall, for T.C. Borough Surveyor, 1, The Crescent, Bridlington. Deposit £1 1s.

FEBRUARY 16.—**Sheffield.**—PAINTING.—For painting works at (1) Town Hall, part interior; (2) Attercliffe Library, exterior; (3) Brightside Library, exterior; (4) 178-186, Mushroom-lane (five houses), exterior, for the T.C. Mr. F. E. P. Edwards, City Architect, Town Hall, Sheffield.

FEBRUARY 18.—**Clydebank.**—PAINTING.—For the painter work in connection with the 22 houses comprised in the first development at Whitecrook site, for the T.C. Town Clerk, Municipal Buildings, Clydebank. Deposit £1 1s.

FEBRUARY 18.—**Cupar.**—RECONSTRUCTION.—For the reconstruction of the Tontine Hotel, Cupar, for the purpose of extending the County Buildings and Sheriff Court Offices, Cupar, for the Fife C.C. Mr. C. R. Douglas, surveyor, Prudential Chambers, 15, East Port, Dunfermline. Deposit £2.

FEBRUARY 18.—**Harrow-on-the-Hill.**—HOUSES.—For the erection of 18 parlour type houses on the Honeybun Estate, for the U.D.C. Mr. J. Percy Bennetts, Engineer and Surveyor, Council Offices, Harrow. Deposit £1.

FEBRUARY 18.—**Hertfordshire.**—SCHOOL.—Erection and completion of a new County Council school to accommodate 144 scholars at Walkern, near Stevenage, for the Hertfordshire County Council. County Surveyor's Office, Hatfield. Deposit £1 1s.

FEBRUARY 18.—**Huddersfield.**—HOUSES.—Erection of 14 houses in Almondbury Bank, for the T.C. Borough Architect, 26, Ramsden-street, Huddersfield.

FEBRUARY 18.—**Ilford.**—SCHOOL BUILDINGS.—Erection and completion under one contract of the following buildings at Steven's-road, Becontree, for the Ilford U.D.C.: (*a*) Upper school; (*b*) Middle and lower schools; (*c*) Medical inspection block, with covered ways thereto from each school. Mr. H. Shaw, M.Inst.C.E., Engineer and Surveyor to the Council, Town Hall, Ilford. Deposit £5 5s.

FEBRUARY 18.—**Penparcau (Aberystwyth).**—MEMORIAL HALL.—For erecting, for the Penparcau and District War Memorial Committee, a public memorial hall. Mr. T. Llew. Thomas, Hon. Sec., "Pretoria," Rhydyfelin, Aberystwyth.

FEBRUARY 18.—**South Queensferry.**—HOUSES.—Erection of 20 houses at Hopetoun-road, for the T.C. Mr. W. M. Scott, architect, Linlithgow.

FEBRUARY 18.—**Stirling.**—HOUSES.—Erection of four five-apartment houses for Larbert Housing extension scheme. For Eastern District Committee of the Stirling C.C. Messrs. A. & W. Black, architects, 5, King's-court, Falkirk. Deposit £1 1s.

FEBRUARY 18.—**Wakefield.**—ALTERATIONS.—For alterations to 4, Bond-street, for West Riding General Purposes Committee. West Riding Architect, County Hall, Wakefield.

FEBRUARY 18.—**Welwyn, Herts.**—COTTAGES.—Erection of 100 cottages in the parish of Welwyn Garden City, in the County of Hertford, for the R.D.C. Mr. Louis de Soissons, Architect, Estate Office, Welwyn Garden City, Herts. Deposit £2 2s.

FEBRUARY 19.—**Eglwysilan (near Pontypridd).**—EXTENSIONS.—For carrying out, for the Pontypridd and Caerphilly U.D. Councils extensions and alterations to the Small Pox Hospital, Mynydd Mayo, Eglwysilan (near Pontypridd). Mr. W. E. Lowe, Surveyor, Municipal Buildings, Pontypridd.

✱FEBRUARY 19.—**Islington, N.1.**—REPAIRING AND RE-POINTING.—Repairing and re-pointing the retaining wall to the footway on the south-west side of Highgate-hill, for the Metropolitan Borough of Islington Borough Engineer, Municipal Offices, Tyndale-place, N.1.

FEBRUARY 19.—**Virginia Water.**—BRIDGE.—For strengthening and improvement of Ruins Bridge on Virginia Water, for the Surrey C.C. Mr. W. P. Robinson, County Surveyor, County Hall, Kingston-on-Thames. Deposit £2 2s.

FEBRUARY 19.—**Warrington.**—HOUSES.—Erection of 54 houses on the Reynolds-street site, for T.C. Mr. W. T. Davenport, Queens' Chambers, Sankey-street, Warrington. Deposit £2 2s.

FEBRUARY 20.—**Crook.**—COTTAGES.—Erection of the following houses for the Aged Miners' Homes: Four houses, situated at Hill Top, Stanley, near Crook; two houses, situated at Sunniside, near Crook, Co. Durham. Mr. Thos. J. Shepherd, Secretary, 17, Double-row, Sunniside, Tow Law, Co. Durham.

FEBRUARY 20.—**Kilmallock.**—HALL.—Erection of a new hall at Kilmallock. Mr. Patrick J. Ryan, C.E., Kilmallock. Deposit £1 1s.

FEBRUARY 20.—**Reading.**—COMPRESSING STATION.—Erection of a compressing station, including compressor house, concrete foundations for machinery, workshop, messroom and subsidiary buildings, for the T.C. Mr. G. Midgley Taylor, 36-38, Victoria-street, Westminster, S.W.1. Deposit £5.

FEBRUARY 20.—**Stornoway.**—COTTAGES.—Erection of cottages at Stornoway, for the T.C. Messrs. Alexander Ross & Son, architects, Inverness.

✱FEBRUARY 21.—**Ealing, W.5.**—NEW SCHOOL.—Erection of a new school at South Ealing, for the E.C of the Borough of Ealing. Mr. W. R. Hicks, M.Inst. C.E., Borough Engineer, Town Hall, Ealing, W.5. Deposit £5 5s.

✱FEBRUARY 21.—**Guildford.**—HOUSES.—Erection of 30 pairs of three-bedroom, non-parlour houses, on the Guildford Park Housing Estate, for the Borough of Guildford. Borough Surveyor, Tun's-gate, Guildford. Deposit £2 2s.

FEBRUARY 21.—**Lichfield.**—IMPROVEMENTS.—For alterations and improvements to the Guildhall and Municipal Offices, for the T.C. Mr. P. A. Benn, City Surveyor, Lichfield. Deposit £2 2s.

✱FEBRUARY 21.—**London, W.6.**—HOUSEBREAKING. Pulling down their disused casual wards and taking away the materials arising therefrom, with the exception of those specified for the Guardians of the Parish of Fulham. Mr. E. J. Mott, Clerk to the Guardians, 129, Fulham Palace-road, London, W.6.

FEBRUARY 21.—**St. Austell.**—ADDITIONS.—For erection of casual wards and disinfecting station at Sedgmoor Priory, for the St. Austell Board of Guardians. Mr. J. W. Simcox, surveyor, St. Austell.

FEBRUARY 21.—**Worthing.**—PAINTING.—For internal painting, &c., at the Corporation Baths, Heene-road. Borough Surveyor, Municipal Offices, Worthing.

FEBRUARY 22.—**Welburn.**—HOUSE.—Erection of residence at Welburn, near Kirbymoorside, for Captain J. E. D. Shaw. Messrs. Garside & Pennington, architects, Ropergate, Pontefract.

FEBRUARY 23.—**Doncaster.**—LOOSE BOXES.—For the erection of 32 loose boxes, &c., on land adjoining Belle Vue, for the T.C. Mr. R. E. Ford, Race Department, 3, Priory-place, Doncaster. Deposit £1 1s.

FEBRUARY 25.—**Heswall.**—EXTENSIONS.—For extensions to the Sanatorium, Heswall, for the West Derby Board of Guardians. Mr. Ernest B. Bailey, F.S.I., 9, Cook-street, Liverpool. Deposit £2 2s.

✱FEBRUARY 25.—**London.**—GENERAL WORKS AND REPAIRS.—Execution of general works and repairs (including jobbing works), exclusive of works of a mechanical character, to sewers, engine houses, buildings, bridges, subways, tunnels, &c., under the supervision of the Chief Engineer of the London County Council, on a schedule of prices for a contract for 12 months commencing April 1, 1924 Chief Engineer, Old County Hall, Spring-gardens, S.W.1. Deposit £3.

✱FEBRUARY 25.—**London, W.**—NURSES' HOME EXTENSIONS.—Extension of the Nurses' Home at the St. Marylebone Hospital, Rackham-street, W.10, for the B.G. of St. Marylebone. Messrs. Constantine & Vernon, architects, 82, Mortimer-street, W., where conditions, &c., may be seen between the hours of 10 a.m. and 5 p.m. on the 18th, 19th and 20th. Deposit two £1 Treasury Notes.

FEBRUARY 25.—**Worthing.**—SHELTERS.—Erection of four glazed shelters on the Marine-parade, Worthing, for the B.C. Borough Surveyor, Municipal Offices, Worthing. Deposit £1 1s.

✱FEBRUARY 26.—**Belvedere.**—POST OFFICE.—Erection of a branch Post Office at Belvedere, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (Cheques payable to the Secretary.)

FEBRUARY 26.—**London, E.3.**—BUILDING ADDITIONS, &c.—Building of a nurses' dining-room, alterations and additions, and redecorations at St. Andrew's Hospital, Devon's-road, Bow, E.3, for the Managers of the Poplar and Stepney Sick Asylum District, St. Andrew's Hospital. Messrs. Andrews & Peascod, architects, 135, Bow-road, E.3. Deposit £3.

FEBRUARY 26.—**London, N.W.6.**—DECORATION' STEAM HEATING AND LIGHTING.—Decoration of certain buildings at the Municipal Hospital, Brentfield-road, Neasden, for the Willesden U.D.C. Mr. F. Wilkinson, M.Inst.C.E., Engineer to the Council, Town Hall, Dyne-road, Kilburn, N.W. 6.

FEBRUARY 28.—**Greenwich.**—HOUSES.—Erection and completion of 48 houses in two sections on the Charlton Housing Estate, completion of Site No. 3, under the supervision of the Council's Architect. Town Clerk's Department, Town Hall, Greenwich. Deposit £2 2s.

✱FEBRUARY 28.—**Hereford.**—STATION SORTING OFFICE.—Erection of a station sorting office, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (Cheques payable to the Secretary.)

FEBRUARY 28.—**Wakefield.**—WORKSHOPS.—Supply of 17 sectional wood workshops, for the West Riding C.C. Health Committee. West Riding Architect, County Hall, Wakefield.

✱FEBRUARY 29.—**Ely.**—HOUSES.—Erection of 20 houses on "The Mews" Housing Site, for the Ely U.D.C. Contractors are invited to tender for the whole or part of the above, including drains, paths and fences. Mr. W. McKelvie, Architect and Surveyor, City Surveyors' Office, Ely. Deposit £1 1s.

✱MARCH 4.—**Aldershot.**—HOUSES.—Erection of eight blocks of four houses, thirty-two in all, at Aldershot Park Housing Scheme No. 2, for the Borough of Aldershot. Borough Surveyor's Office, Municipal Buildings, Aldershot. Deposit £5.

✱MARCH 4.—**Barking.**—HOUSES.—Erection of about 59 houses on the Eastbury Estate, Ripple-road, Barking, for the Barking U.D.C. Council's Architect, Mr. C. J. Dawson, F.R.I.B.A., Clock House Chambers, East-street, Barking. Deposit £5.

MARCH 5.—**Salford.**—BUILDING.—Erection of old people's homes, at Hope, Pendleton, near Manchester, for the Salford Board of Guardians. Mr. E. H. Inchley, Clerk to the Guardians, Poor Law Offices, Eccles New-road, Salford. Deposit £2 2s.

NO DATE.—**Barnsley.**—HOUSES.—Erection of four houses in Barnsley. Mr. N. A. Whittam, *Chronicle* Buildings, Barnsley.

NO DATE.—**Barnsley.**—HOUSES.—Erection of various houses in Huddersfield-road, also house at Monk Bretton. Mr. P. A. Hinchliffe, 14, Regent-street, Barnsley.

NO DATE.—**Coalburn.**—HOUSES.—Erection of 32 houses at Coalburn, for the Lanark C.C. Mr. William B. Dow, measurer, 212, St. Vincent-street, Glasgow.

NO DATE.—**Darvell.**—HOUSES.—Erection of houses, for T.C. Mr. J. E. Gibson, Town Clerk, Darvell.

NO DATE.—**Datchet.**—SCHOOLROOM.—For temporary schoolroom (timber-built). Mr. Edward T. Bowyer, Surveyor to the Managers, High-street, Slough.

✱NO DATE.—**London.**—BUILDING WORKS, &C.—The L.C.C. invites applications from persons and firms for places on the Council's approved lists of persons and firms to be invited to tender for various works in connection with the Council's educational institutions: (1) New buildings, &c., (2) structural alterations, (3) cleaning and painting, including minor repairs, (4) heating. Architect, County Hall (Room 3), Westminster Bridge, S.E.1.

✱NO DATE.—**Wallasey.**—BUILDING EXTENSIONS.—Building of extensions to boiler house and a new switchgear house, for the County Borough of Wallasey (Electricity Dept.). Borough Electrical Engineer and Manager, Mr. B. T. Hawkins, Sea View-road, Wallasey.

FURNITURE, MATERIALS, etc.

FEBRUARY 9.—**Darlington.**—MATERIALS.—Supply of goods and materials to the R.D.C. Surveyor, Union Offices, Darlington.

FEBRUARY 9.—**Newark.**—MATERIAL.—For supply of macadam, granite and slag to R.D.C. Mr. R. Oakden, Surveyor, 29, Winchelsea-avenue, Newark.

FEBRUARY 9.—**Newmarket.**—MATERIALS.—Supply of granite and chippings to the U.D.C. Mr. W. H. Eley, Surveyor, Newmarket.

FEBRUARY 9.—**Thirsk.**—MATERIALS.—Supply of road materials, pipes, tools, &c., to the R.D.C. Mr. J. W. Lupton, Surveyor, Thirsk.

FEBRUARY 9.—**Trowbridge.**—MATERIALS.—Supply of 350 tons ¾ or ¾ in. granite or limestone chippings to the U.D.C. Mr. Geo. W. J. Clark, Surveyor, Town Hall, Trowbridge.

FEBRUARY 10.—**Port Talbot.**—MATERIALS.—Supply of ironmongery, castings, limestone, tarmac, &c., to T.C. Borough Engineer, Port Talbot.

FEBRUARY 11.—**Bristol.**—MATERIALS.—Supply to the Port of Bristol Authority of rubble stone, broken stone and topping, canvas hose, bricks, slates, drain pipes, &c. Mr. T. A. Peace, Engineer, Avonmouth Dock.

FEBRUARY 11.—**Eccles.**—DUST CARTS.—For two carts for use in the Scavenging Department. Mr. C. W. Laskey, Public Health Offices, Eccles.

FEBRUARY 11.—**Hull.**—MATERIALS.—For stores for the Tramways Department. Mr. E. S. Rayner, Tramways Engineer, Hull.

FEBRUARY 11.—**Kettering.**—DUST VANS.—Supply of four house refuse collecting vans, to the U.D.C. Mr. T. Reader Smith, Surveyor, Market-place, Kettering.

FEBRUARY 11.—**Mitcham.**—MATERIALS.—For road and other materials, for one year, for the U.D.C. Surveyor, Broadway House, Lower Mitcham.

FEBRUARY 12.—**Cardiff.**—FURNITURE.—For officers' furniture at Cardiff Workhouse, for the B.G. Mr. R. Stephenson, Clerk, Union Offices, 11, Park-place, Cardiff.

FEBRUARY 12.—**Deptford.**—MATERIALS.—For supply of road and other materials, for one year, for B.C. Mr. A. Purkis, Town Clerk, Town Hall, New Cross-road, S.E. 14.

FEBRUARY 12.—**Ramsgate.**—LAMP PILLARS, &C.—Supply of 300 cast-iron lamp columns, and 300 square copper gas lanterns, to the T.C. Mr. R. Hy. Ruthven, Gas and Water Offices, Boundary-road, Ramsgate.

FEBRUARY 12.—**Rugby.**—MATERIALS.—Supply of granite and dry slag, to the R.D.C. Mr. J. W. Pendred, Clerk, Rugby.

FEBRUARY 12.—**Tadcaster.**—MATERIALS.—For road material, stores, &c., for the R.D.C. Mr. Geo. A. Bromet, Clerk, Kirkgate, Tadcaster.

FEBRUARY 13.—**Belfast.**—MATERIALS.—Supply to the Belfast and County Down Railway Co. of stores. Mr. H. E. Mellor, Secretary, Queen's Quay Terminus, Belfast.

FEBRUARY 13.—**London, E.C.1.**—STORES, &C.—Supply of the undermentioned stores, &c., for the periods of six or twelve months, commencing April 1, 1924, as the Metropolitan Water Board may decide. Chief Engineer, Metropolitan Water Board, New River Head, 173, Rosebery-avenue, E.C.1, by personal application (Room 155) or upon forwarding a stamped addressed brief envelope.

FEBRUARY 13.—**Louth.**—MATERIALS.—Supply of granite and slag to the R.D.C. Mr. F. J. M. Ingoldby, Clerk, Council House, Louth.

FEBRUARY 13.—**Middlesex.**—ROAD MATERIALS.—Supply of granite, tarred slag and granite chippings to the Middlesex C.C. Mr. A. Dryland, County Engineer, Middlesex Guildhall, Westminster, S.W.1.

FEBRUARY 14.—**Burnley.**—MATERIALS.—Supply of general stores for the year, to the Tramways Dept. General Manager, Queensgate Depot, Burnley.

FEBRUARY 14.—**Escrick.**—MATERIALS.—Supply of whinstone, limestone, slag, and tar to the R.D.C. Mr. J. R. Hudson, Highway Surveyor, 4, Heslington-road, York.

FEBRUARY 14.—**Leeds.**—MATERIALS.—Supply of sewer ironwork and galvanised dirt boxes, for one year. Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

FEBRUARY 14.—**Liverpool.**—MATERIALS.—Supply of glass for street lamps, lamp standards, &c., to the T.C. City Lighting Engineer, 15, Highfield-street, Liverpool.

FEBRUARY 14.—**London, S.W.**—VARIOUS MATERIALS.—Supply of various materials and services for various periods, for the Lambeth B.C. Mr. Osmond Cattlin, Assoc.M.Inst.C.E. (chartered civil engineer), Borough Engineer, Town Hall, Brixton-hill, S.W.2.

FEBRUARY 14.—**Wallington.**—MATERIALS.—For supply of road and other materials, for one year, for U.D.C. Mr. S. F. R. Carter, Surveyor, Council Offices, Wallington, Surrey.

FEBRUARY 14.—**Wells.**—MATERIALS.—Supply of tar, macadam and limestone to the R.D.C. Mr. O. W. Berry, Surveyor, Poor Law Offices, Wells.

FEBRUARY 15.—**Acton.**—MATERIALS.—Supply of granite, artificial stone paving, tar, &c., to the B.C. Mr. Wm. Hodson, Town Clerk, Municipal Offices, Acton, W.3.

FEBRUARY 15.—**Islington.**—MATERIALS.—Supply of highway materials to the B.C. Mr. C. Fletcher, Town Clerk, Municipal Offices, Islington, N.

FEBRUARY 15.—**London.**—CEMENT.—Supply of Portland cement to the South Indian Railway Co. Offices, 91, Petty France, S.W. Charge 5s.

FEBRUARY 15.—**Ruislip-Northwood.**—MATERIALS.—Supply of road materials to the U.D.C. Mr. H. R. Metcalfe, Surveyor, Council Offices, Northwood.

FEBRUARY 16.—**Bedford.**—MATERIALS.—For supply of road materials and for cartage of road materials, for C.C. County Surveyor, Shire Hall, Bedford.

FEBRUARY 16.—**Boston.**—MATERIALS, &C.—Supply of broken and unbroken road materials and surface tarring, for the Holland C.C. Mr. Wm. A. Rogerson County Surveyor, Sessions House, Boston.

FEBRUARY 16.—**Cardiff.**—MATERIALS.—Supply of engineers', builders' and other stores, to the Water Dept. Mr. C. H. Priestley, Waterworks Engineer, City Hall, Cardiff.

FEBRUARY 16.—**Chislehurst.**—MATERIALS.—Supply of materials for one year, to the U.D.C. Mr. J. J. Brown, Clerk, Council Offices, Chislehurst.

FEBRUARY 16.—**Hayes.**—TAR.—Supply of 12,000 gallons of refined tar, to the U.D.C. Mr. D. C. Fidler, Surveyor, Council Offices, Hayes.

FEBRUARY 16.—**Hursley.**—TAR.—Supply of tar to the R.D.C. Mr. J. P. Game, Surveyor, Hursley, near Winchester.

FEBRUARY 16.—**Stafford.**—MATERIALS.—Supply of stores and materials to the T.C. Mr. W. Plant, Borough Engineer, Borough Hall, Stafford.

FEBRUARY 18.—**Isle of Wight.**—MATERIALS.—Supply of granite, chippings, tar, &c., to the R.D.C. Mr. E. B. Wray, surveyor, 30, Pyle-street, Newport, Isle of Wight.

★FEBRUARY 18.—**London, E.5.**—IRON FENCING.—Supply and erection of wrought iron unclimbable iron fencing at Millfields, Clapton, E.5, for the London County Council. The Chief Officer, Parks Department, The County Hall, Westminster Bridge, S.E.1.

FEBRUARY 18.—**Long Sutton.**—ROAD MATERIALS.—For supply of road material to the U.D.C. Surveyor, Long Sutton, Lincs.

FEBRUARY 18.—**Richmond.**—MATERIALS.—Supply of road and other materials, to the T.C. Mr. J. H. Brierley, Borough Surveyor, Town Hall, Richmond, Surrey.

FEBRUARY 18.—**Southport.**—MATERIALS.—Supply of various materials to the T.C. Mr. A. E. Jackson, Borough Engineer, Town Hall, Southport.

FEBRUARY 18.—**Wakefield.**—MATERIALS.—Supply to the West Riding County Council of road materials and stores. West Riding Surveyor, County Hall, Wakefield.

FEBRUARY 18.—**Waltham.**—MATERIALS.—Supply of granite, flints, gravel, hoggin, ballast and sand, and tar-macadam, &c., to the U.D.C. Mr. W. C. Holloway, Surveyor, Town Hall, Waltham Abbey.

FEBRUARY 18.—**Warrington.**—SANITARY CART.—For one tumbler cart with a capacity of 260 gallons, for the T.C. Mr. A. M. Ker, Borough Engineer, Warrington.

FEBRUARY 19.—**Birkenhead.**—STORES.—Supply of stores to Tramways' Department for one year. Tramways' Manager, Birkenhead.

FEBRUARY 19.—**Manchester.**—STORES.—For supply of stores to the tramways department. Mr. H. Mattinson, general manager, 55, Piccadilly, Manchester.

FEBRUARY 20.—**Chester.**—MATERIALS.—Supply of granite macadam and chippings, tarred material, tar compounds, and tarspraying, to the Cheshire C.C. Mr. W. Holland, County Surveyor, The Castle, Chester.

FEBRUARY 20.—**Hammersmith.**—STORES.—For supply of stores for one year to the Electricity Dept. of the B.C. Mr. G. G. Bell, Borough Electrical Engineer, Hammersmith, W.

FEBRUARY 20.—**London.**—LOCKS.—For the supply of locks to H.M. Commissioners of Works. Controller of Supplies, H.M. Office of Works, King Charles-street, S.W.

FEBRUARY 20.—**Rawtenstall.**—MATERIALS.—Supply of highways material to the T.C. Borough Surveyor, Town Hall, Rawtenstall.

FEBRUARY 21.—**Frome.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. L. Slaughter, Public Offices, Frome.

FEBRUARY 21.—**Greenwich.**—MATERIALS.—For supply of road and other material, for one year, for B.C. Borough Engineer, Town Hall, Greenwich-road, S.E. 10.

FEBRUARY 21.—**Romney.**—MATERIALS.—Supply of tar, or tar substitute, rock, rock chippings, gravel, beach and grit, to the R.D.C. Mr. H. J. Smith, New Romney, Kent.

FEBRUARY 22.—**Finchley.**—MATERIALS.—Supply of tar and road materials to the U.D.C. Surveyor, 9, The Hawthorns, Finchley, N.3.

FEBRUARY 22.—**Wetherby.**—MATERIALS.—Supply of slag, granite, tar, &c. Mr. A. Suttel, surveyor, Council Offices, Wetherby.

FEBRUARY 23.—**Earby.**—MATERIALS.—Supply of granite, limestone, tarred slag, refined tar or other spraying compounds to the U.D.C. Mr. Jas. E. Aldersley, Surveyor, Council Offices, Earby.

FEBRUARY 25.—**Hertford.**—MATERIALS.—Supply of broken granite, slag, limestone, gravel, sand, lime, tar, &c., to the T.C. Borough Surveyor, The Castle, Hertford.

FEBRUARY 25.—**St. Marylebone.**—MATERIALS.—Supply of tools and ironmongery, &c., to Highway Dept. of B.C. Mr. J. Gair, Engineer, Town Hall, Marylebone-road, N.W.

FEBRUARY 26.—**Hailsham.**—MATERIALS.—For supply of granite, limestone and flints to the R.D.C. Mr. G. B. Fairchild, surveyor, Hailsham.

FEBRUARY 28.—**Hoylake.**—MATERIALS.—Supply of road materials, cast-iron pipes, reinforced concrete pipes, &c., to the U.D.C. Surveyor, Town Hall, Hoylake.

FEBRUARY 29.—**Canterbury.**—MATERIALS.—Supply of road and other materials to the T.C. Mr. P. H. Warwick, City Surveyor, Canterbury.

FEBRUARY 29.—**Ossett.**—MATERIALS.—For supply of materials, stores, workmen's tools, &c., for one year, for T.C. Borough Surveyor, Town Hall, Ossett.

FEBRUARY 29.—**Upholland.**—MATERIALS.—For road and other materials, for one year, for U.D.C. Mr. A. Hunt, Clerk, Upholland, Lancs.

FEBRUARY.—**Westminster.**—MATERIALS, &C.—For works and supplies, for the Westminster C.C. Mr. John Hunt, Town Clerk, City Hall, Charing Cross-road, W.C.2.

MARCH 3.—**Middlesbrough.**—MATERIALS.—Supply of road and other materials to the T.C. Mr. S. E. Burgess, Borough Engineer, Middlesbrough.

MARCH 5.—**Battersea.**—PAINTS, &C.—Supply of (1) Paints, &c., (2) special paints, enamels, &c., (3) painters' sundries, (4) varnish, &c., (5) bricks, cement, lime, &c., for 12 months, to the B.C. Town Hall, Lavender-hill, S.W.11.

ENGINEERING, IRON AND STEEL.

FEBRUARY 9.—**Bingley.**—ROLLER.—Supply of 10-ton nominal compound steam road roller, also independent scarifier, for the U.D.C. Mr. H. Bottomley, Surveyor, Town Hall, Bingley.

FEBRUARY 9.—**St. Ives.**—WATER-SOFTENING PLANT.—Supply of a water-softening apparatus at alternative prices, for dealing with 100, 150, and 200 gallons an hour, to the Board of Guardians. Mr. G. D. Day, Clerk, The Broadway, St. Ives, Hunts.

FEBRUARY 9.—**Tadcaster.**—ELECTRIC LIGHTING.—For electric lighting, Infectious Diseases Hospital, Garforth, for the R.D.C. Mr. Geo. A. Bromet, Clerk, Tadcaster.

FEBRUARY 11.—**Dunstable.**—HEATING.—For heating offices with hot-water radiators and boiler, for T.C. Mr. W. F. Wilkins, Borough Surveyor, Town Hall, Dunstable.

FEBRUARY 11.—**Gainsborough.**—PUMPING PLANT.—For engine and pumping plant, for the U.D.C. Mr. S. W. Parker, Waterworks Engineer, Council Offices, Gainsborough. Deposit £2 2s.

FEBRUARY 11.—**Kettering.**—**Weighbridge.**—Supply and erection of a 15-ton weighbridge, for the U.D.C. Mr. T. Reader Smith, surveyor, Market-place, Kettering

FEBRUARY 11.—**Sheerness.**—CAST-IRON PIPES.—For supply of 25 tons of 3 in. cast-iron pipes and specials, for U.D.C. Surveyor, Council Offices, Sheerness.

FEBRUARY 11.—**Windsor.**—RECONSTRUCTION OF ENGINEERING SERVICES.—Reconstruction of the engineering services at the Poor Law Institution, Old Windsor, Berks, for the Guardians of the Windsor Union. Constructors must tender for the whole of the work. Mr. Walter W. Nobbs, M.I.Mech.E. (the Consulting Engineer in charge of the works), of 50, Fairhazel-gardens, N.W. 6. Deposit £5 5s.

FEBRUARY 12.—**Carlisle.**—BRIDGES.—For designs and tenders for erection of steel superstructures for two bridges on new loop road, Whitehaven, for the Cumberland C.C. Mr. G. O. Lockwood, County Surveyor, Carlisle. Deposit £2.

FEBRUARY 12.—**Durham.**—BRIDGES.—Construction of new bridges and the widening of existing bridges, for the Durham C.C., viz.: (1) New Derwent Bridge, near Swalwell (three spans and raised approaches); (2) new Lambton Bridge, near Chester-le-Street (three spans and improvement of approaches); (3) new bridge at Croxdale (four spans and new approaches); (4) widening of Browney Bridge near Croxdale; (5) Haughton-le-Skerne new bridge, near Darlington (one span and diverting approaches); (6) Gaunless Bridge, at Bishop Auckland (two reinforced concrete culverts and embankments); (7) widening of St. Helen's Auckland Bridge; (8) Great Burdon Bridge, near Darlington (underpinning foundations and strengthening existing approaches); (9) Whitton, near Stockton (new bridge and approaches); (10) Langley Bridge, near Durham (widening existing structure); (11) Whitehill Gate Bridge, near Chester-le-Street (rebuilding and widening); (12) Ryhope Dene Bridge, near Ryhope (reinforced concrete culverts and embankments). Mr. A. E. Brookes, County Engineer, Shire Hall, Durham. Deposit £2 2s.

FEBRUARY 12.—**London.**—ROOFWORK, &C.—Supply to the Great Indian Peninsula Railway Co., of (1) roofwork; (2) cast-iron chairs; (3) steel spikes. Offices, 48, Copthall-avenue, E.C. Charges 10s. for 1 and 2, and 5s. for 3.

FEBRUARY 12.—**Manchester.**—REFRIGERATING ROOMS.—Supply and erection of refrigerating rooms and plant at the Withington Institution, for the Board of Guardians. Mr. Hargreaves, Superintendent of Works, Union Offices, All Saints', Manchester.

FEBRUARY 12.—**Manchester.**—TRACK WORK.—Supply of permanent way special track work to the T.C. Mr. H. Mattinson, General Manager, Corporation Tramways, 55, Piccadilly, Manchester. Deposit £1 1s.

FEBRUARY 12.—**Norwich.**—STEELWORKS.—For the steel constructional work for the new generating station at Thorpe Marshes, for the T.C. Mr. A. E. Collins, City Engineer, Guildhall, Norwich. Deposit £10.

FEBRUARY 12.—**Truro.**—FLOATING BRIDGE.—Construction of a large steam chain floating bridge for use on its ferry service between Devonport and Torpoint, for the Cornwall C.C. Mr. W. L. Platts, Clerk, County Hall, Truro. Deposit £2 2s.

FEBRUARY 13.—**Caistor.**—ELECTRICAL INSTALLATION.—Provision and fitting of a complete electric lighting installation at the Institution of the Board of Guardians. Mr. A. A. Padley, Clerk, Union Offices, Caistor.

FEBRUARY 13.—**Glasgow.**—ELECTRIC LIGHTING.—For electric lighting installation of the Knightswood Housing Scheme, for the T.C. Mr. R. B. Mitchell, City Electrical Engineer, 75, Waterloo-street, Glasgow.

FEBRUARY 13.—**Manchester.**—HEATING INSTALLATION.—Providing and fixing a low-pressure heating apparatus at the Upper Jackson-street Municipal School, Hulme. Education Offices, Deansgate, Manchester. Deposit £1 1s.

FEBRUARY 13.—**Southampton.**—ELECTRICAL INSTALLATION.—For electric installation at the Hollybrook Homes and the St. Mary-street Poor Law Institution, for the Board of Guardians. Mr. A. J. Walden, Clerk, St. Mary-street, Southampton.

FEBRUARY 13.—**Stoke-on-Trent.**—STEELWORK.—For steelwork for foundation to central power house, &c. Borough Electrical Engineer, Stoke.

FEBRUARY 14.—**Argentine.**—POWER STATION.—**For the construction of a central electric power station of 15,000 h.p., for the Argentine State Oilfields Administration. Department of Overseas Trade, 35, Old Queen-street, S.W.**

FEBRUARY 14.—**Lymm.**—STEELWORK.—For the supply of the necessary steelwork for the renewal of the retort house floor, for the U.D.C. Mr. T. H. West, Gas Manager, Lymm.

FEBRUARY 14.—**Portland.**—ROOF.—Taking down of existing roof and constructing reinforced concrete roof for Yeates Reservoir, for U.D.C. Mr. R. Davison, Surveyor, Council Offices, Portland.

FEBRUARY 15.—**London.**—WIRE.—Supply of electric light wire and cable to H.M. Commissioners of Works. Controller of Supplies, H.M. Office of Works, King Charles-street, S.W.

FEBRUARY 16.—**Cromer.**—PUMPING PLANT.—Erection and setting to work of pumping machinery and boiler at the pumping station, Metton, for the U.D.C. Messrs. J. C. Melliss & Co., 156, Gresham House, Old Broad-street, E.C.2. Deposit £5.

FEBRUARY 18.—**Blantyre.**—STEELWORK.—For the providing of the steelwork required in the renewal of an overbridge at Blantyre and an underbridge at Hartwood, for the London Midland & Scottish Railway Co. (Northern Division). Divisional Engineer, Buchanan-street Station, Glasgow. Deposit £2 2s.

FEBRUARY 18.—**Bristol.**—ELEVATOR.—**For the construction of a floating pneumatic grain elevator, to handle 150 tons per hour, at the Avonmouth Docks, for the Docks Committee. Mr. T. A. Peace, Engineer, Port of Bristol. Deposit £5.**

FEBRUARY 18.—**Dublin.**—STEELWORK.—Supply to the Midland Great Western Railway of Ireland Company of steelwork, for Bridge No. 206. Chief Engineer, Broadstone Terminus, Dublin. Charge 4s.

FEBRUARY 18.—**Port Talbot.**—ROLLERS.—Supply of one 10-ton and one 8-ton steam roller, to the T.C. Borough Engineer, Port Talbot.

FEBRUARY 20.—**Hull.**—PUMPS.—Construction and erection of two sets of pumping plant, each set capable of delivering five million gallons of water per 24 hours, for the T.C. Mr. C. B. Newton, Engineer, Guildhall, Hull. Deposit £5.

FEBRUARY 21.—**Birmingham.**—BOILER, &C.—Supply of one new Lancashire boiler, 30 ft. by 8 ft. 6 in., the provision of new seating for the same, and also for the enlargement of the existing economiser at Dudley-road Hospital, for the Board of Guardians. Mr. James Curtis, Clerk, Union Offices, Edmund-street, Birmingham.

FEBRUARY 25.—**Edinburgh.**—WASHHOUSE EQUIPMENT.—For the engineering equipment of a new public washhouse to be erected at Abbeymount (including new steam boiler and other relative plant), for the T.C. Mr. James A. Williamson, City Architect, Public Works Office, Edinburgh.

FEBRUARY 27.—**Madras.**—PIPES.—Supply of cast iron pipes, special castings, &c., to the T.C. Messrs J. Mansergh & Sons, agents to the Corporation, 5 Victoria-street, S.W.

MARCH 1.—**Jamaica.**—DAM.—For the construction of a cyclopean masonry dam and contingent works required in connection with the extension of the Kingston and St. Andrews Water Works. Crown Agents for the Colonies, 4, Millbank, London, S.W.1.

MARCH 6.—**Colwyn Bay.**—MACHINERY.—For sewerage pumping machinery, for the U.D.C. Mr Robert Green, engineer, 37, Bennetts-hill, Birmingham. Deposit £5 5s.

MARCH 8.—**South Africa.**—POWER STATION.—For steel frame buildings for power station and equipment of power station, &c., for electrification of railways in the neighbourhood of Cape Town, for the Union of South Africa Electricity Supply Commission. Messrs. Merz & McLellan, 32, Victoria-street, S.W. Deposit £10 10s.

MARCH 12.—**Madras.**—PUMPING PLANT.—Supply of sewage pumping machinery to the T.C. Messrs. J. Mansergh & Sons, agents, 5, Victoria-street, S.W. Deposit 10s. each of two contracts.

MARCH 31.—**Egypt.**—PUMPING PLANT.—Supply and erection of a pumping plant at Boscili, for the Egyptian Ministry of Public Works. Inspecting Engineer, Egyptian and Sudan Governments, Queen Anne's Chambers, Westminster, S.W.1.

MAY 1.—**China.**—BRIDGE.—**The Commercial Councillor at Peking has forwarded to the Department of Overseas Trade copies of the official text of a call for tenders by the Hai Ho Conservancy Commission, for the erection of a bridge over the Hai Ho at Tientsin. Tenders must be in the hands of the Commission before noon on May 1, 1924. The cost of erecting the new bridge has been roughly estimated at Tls. 700,000, say £105,000. Department of Overseas Trade, 35, Old Queen-street, S.W. 1. Reference 11647/F.E./E.C./2.**

MAY 1.—**Egypt.**—ROOFS, &C.—Construction of steel roofs and shelter of Alexandria new station, for the Egyptian State Railways. Inspecting Engineer, Egyptian and Sudan Governments, Queen Anne's Chambers, Broadway, Westminster, S.W. Charge £6 3s.

ROAD, SANITARY, AND WATER WORKS.

FEBRUARY 9.—**East Lothian.**—EXTENSION OF MAINS.—For construction of pipe lines between Humble Station and Fountain Hall, for the East Lothian Western District Water Board. Water Superintendent, Bank of Scotland Buildings, Haddington. Deposit £2 2s.

FEBRUARY 9.—**Lancashire.**—ROADS.—Construction of a new road and the widening and reconstruction of part of the existing main road between the "Rose and Crown Inn," Much Hoole, and Sollom, for the Lancashire C.C. County Surveyor, County Offices, Preston.

FEBRUARY 9.—**Penistone.**—SEWAGE EXTENSIONS.—Laying about 350 lin. yards of surface water drains, together with extensions and alterations to the sewage disposal works, for the U.D.C. Mr. F. J. Rodwell, 37 and 38, Prudential Assurance Buildings, Park-row, Leeds. Deposit £2 2s.

FEBRUARY 11.—**Barnsley.**—SANITARY.—For the works required for the conversion of privies into water-closets at Pindar Oaks Cottages, Doncaster-road, for the T.C. Borough Engineer, Fairfield House Offices, Barnsley.

FEBRUARY 11.—**Bedwellty.**—STREET WORKS.—For carrying out, for the Bedwellty U.D.C., the following street works: Sewering, levelling, metalling, flagging, channelling and making good (*a*) Pentwyn-street, Blackwood, (*b*) South View-road, Blackwood, (*c*) Pentwyn-avenue, Blackwood. Mr. Dan. H. Price, Surveyor, Council Offices, Aberbargoed.

FEBRUARY 11.—**Coseley.**—SEWERS.—Construction of stoneware and cast-iron sewers, from 6 in. to 24 in. diameter, &c., for the U.D.C. Messrs. Berrington, Son & Watney, Prudential Chambers, Lichfield-street, Wolverhampton. Deposit £5 5s.

FEBRUARY 11. — **Eccles.** — SEWAGE WORKS.—For additions and alterations to the sewage works of the T.C. Mr. Thomas S. Picton, Borough Engineer, Town Hall, Eccles. Deposit £3 3s.

FEBRUARY 11.—**Glasgow.**—SEWER.—For alterations on the sewer at junction of Fauldhouse-street, for the T.C. Office of Public Works, City Chambers, 64, Cochrane-street, Glasgow.

FEBRUARY 11.—**Huddersfield.**—SEWERS.—Construction of 1,388 lineal yards of earthenware pipe and cast-iron pipe sewers, of internal diameters varying from 5 in. to 12 in., in two sections, for the T.C. Borough Engineer, 1, Peel-street, Huddersfield.

★FEBRUARY 11.—**Leek.**—STREETS AND SEWERS.—Construction of new streets, sewers, &c., for the development of the housing scheme, Junction-road, Leek, for the U.D.C. Mr. W. E. Beacham, Surveyor to the Council, Town Hall, Leek.

FEBRUARY 11.—**Manchester.**—ROADS.—(1) Construction of carriageway and footway, Princess-road; (2) construction of carriageway and footway, Kingsway-road; (3) construction of second carriageway and footway, Royton to Failsworth-road, for the T.C. City Engineer, Town Hall, Manchester. Deposit £2 2s.

FEBRUARY 11.—**Repton.**—SEWERS.—For laying 700 yds. of 9 in. stoneware pipe sewers, &c., at Linton, for R.D.C. Messrs. Willcox & Raikes, 63, Temple-row, Birmingham. Deposit £5 5s.

FEBRUARY 11.—**Sleaford.**—SEWERAGE.—For providing and laying sewer pipes in Great Hale-road, and constructing tank and filter, for the R.D.C. Mr. W. B. Marsden, Council Offices, Sleaford.

FEBRUARY 11.—**Whitley and Monkseaton.**—ROADS.—For private street improvement works, for the U.D.C. Mr. A. J. Rousell, Surveyor, Council Offices, Whitley Bay. Deposit £1 1s.

FEBRUARY 11.—**York.**—ROADS.—For making-up parts of (1) Chatsworth-terrace, (2) Berkeley-terrace, (3) Back Chatsworth-terrace, (4) Back Bishopthorpe-road East, for the T.C. Mr. F. W. Spurr, City Engineer, Guildhall, York. Deposit £1 1s.

FEBRUARY 12.—**Birkenhead.**—SEWER.—For the construction of 421 yds. of brick and reinforced concrete sewer, and 580 yds. of reinforced concrete sewer, for the T.C. Mr. C. Brownridge, Borough Engineer, Town Hall, Birkenhead. Deposit £3 3s.

FEBRUARY 12.—**Blaydon.**—ROADS.—For making-up Back Lucy-street West, Back Dene-road, and Back Shibdon-road, for the U.D.C. Surveyor, Blaydon. Deposit £1 1s.

FEBRUARY 12.—**Carlisle.**—SEWERS.—For laying 600 yds. of 9 in. stoneware pipe sewer, &c., for the T.C. Mr. Henry C. Marks, City Engineer, 18, Fisher-street, Carlisle.

FEBRUARY 12.—**Newport (Mon).**—RE-PAVING.—For re-paving portions of the Caerleon-road, Newport (Mon), for the B.C. Borough Engineer, Town Hall, Newport. Deposit £1 1s.

FEBRUARY 12.—**Salford.**—ROADS.—For the paving of five streets with rock asphalte and three passages with stone setts, for the T.C. Borough Engineer, Town Hall, Salford.

FEBRUARY 12.—**Southgate.**—ROADS.—(1) Widening and making-up part of Bourne Hill; (2) widening and making-up Wolves-lane; (3) sewers in Winchmore Hill-road; (4) sewer in Eversley Park-road, for the U.D.C. Mr. R. Phillips, Surveyor, Town Hall, Palmers' Green, N.

FEBRUARY 12.—**Worsborough.**—SANITARY.—For the conversion of trough closets into pedestal latrines, pointing to walls, &c., at Worsborough Blacker Council School, for the West Riding E.C. Education Department, County Hall, Wakefield.

FEBRUARY 13.—**Birmingham.**—SEWERS.—For the construction of about 2,220 yards of stoneware pipe sewers in Watford-road and Linden-road, Cotteridge, for the T.C. Mr. H. H. Humphries, City Engineer, Council House, Birmingham. Deposit £2.

FEBRUARY 13.—**Birmingham.**—WOOD PAVING.—For laying of 19,000 super yards of creosoted deal wood block paving at Gravelly-hill, Gravelly-hill North, High-street, and Sutton-road, Erdington, for the T.C. Mr. H. H. Humphries, City Engineer, Council House, Birmingham. Deposit £2.

FEBRUARY 13.—**Dulverton.**—ROLLERS.—Supply of steam rollers for one year to the R.D.C. Mr. F. R. Stoker, Surveyor, Dulverton.

FEBRUARY 13.—**Eccles.**—ROADS.—For making-up Cavendish-street, Vaughan-street (part of), back Catherine-street South, No. 1, back Catherine-street South, No. 2, and various passages, for the T.C. Mr. Thomas S. Picton, Surveyor, Town Hall, Eccles. Deposit £1 1s.

FEBRUARY 13.—**Edmonton.**—TENNIS COURTS.—For laying of twelve hard tennis courts at Recreation Ground, Church-street, for the U.D.C. Mr. Cuthbert Brown, Surveyor, Town Hall, Edmonton, N.9.

FEBRUARY 13.—**Fulham.**—ROADS.—For making-up Sulivan-road, for B.C. Mr. A. F. Holden, Borough Surveyor, Town Hall, Fulham, S.W.6.

FEBRUARY 13.—**Hackney.**—ROADS.—For making-up of (i) Casimir-road, (ii) Cleveleys-road, (iii) Leagrave-street, for the B.C. Mr. Norman Scorgie, Borough Engineer, Town Hall, Hackney, E.8. Deposit £1 1s.

FEBRUARY 13.—**Leeds.**—ROADS.—For the tar macadamising of carriageways and tar paving of footpaths in the following private streets:—Everleigh-street (part), Temple View-grove (part), East Park-view (part), Ivy-street (part), Ecclesburn-road; also for the kerbing and paving of channels at Cockshott-lane improvement, for the T.C. Highways and Permanent Way Dept., 1, Swinegate, Leeds. Deposit £1 1s.

FEBRUARY 13.—**London.**—REFUSE REMOVAL.—For removal of furnace refuse, &c., for periods of six and twelve months, for Metropolitan Water Board. Chief Engineer, Metropolitan Water Board, New River Head, 173, Rosebery-avenue, E.C.1.

FEBRUARY 13.—**Middleton.**—ROADS.—For making-up Cowper-street, Laurel-street, and Saville-street, Middleton Junction, and for partial making-up Mary-street, Glebe-street, and Mitchell-street, Middleton, for T.C. Borough Engineer, Town Hall, Middleton Lancs.

FEBRUARY 13.—**Rothesay.**—SEWERAGE.—For reconstruction of certain sewers within the town, together with an intercepting outfall sewer, 2,610 yds. long, for T.C. Mr. J. B. Brodie, engineer, 141, West George-street, Glasgow. Deposit £5.

FEBRUARY 13. — **Wembley.** — PUBLIC CONVENIENCE. — Construction of a public convenience at Wembley Green, within the Wembley Urban District. Mr. Walter H. Lewis, Engineer and Surveyor, Council Offices, Wembley, Middlesex. Deposit £2 2s.

FEBRUARY 13.—**Wembley.**—ROADS.—For road works at Wembley Green, for the U.D.C. Mr. W. H. Lewis, Surveyor, Council Offices, Wembley. Deposit £2 2s.

FEBRUARY 13.—**Wembley.**—ROADS.—For making-up of Brewery-lane, for the U.D.C. Mr. W. H. Lewis, Surveyor, Council Offices, Wembley. Deposit £2 2s.

FEBRUARY 13.—**Wembley.**—ROADS.—For making-up Northwick-avenue, for the U.D.C. Mr. W. H. Lewis, Surveyor, Council Offices, Wembley. Deposit £2 2s.

FEBRUARY 13.—**Wembley.**—ROADS.—For works of widening at Raglan-gardens, for the U.D.C. Mr. W. H. Lewis, Surveyor, Council Offices, Wembley. Deposit £2 2s.

FEBRUARY 14.—**Barnet.**—ROADS.—For making-up Petworth-road and Myddelton Park, for the U.D.C. Mr. F. P. Kindell, Surveyor, Council Offices, The Priory, Friern Barnet-road, N.11.

FEBRUARY 14.—**Hertfordshire.**—ROADS.—For construction of Watford by-pass road between Elstree and Hunton Bridge (about 6 miles), for the C.C. Mr. A. E. Prescott, County Surveyor, Hatfield. Deposit £10 10s.

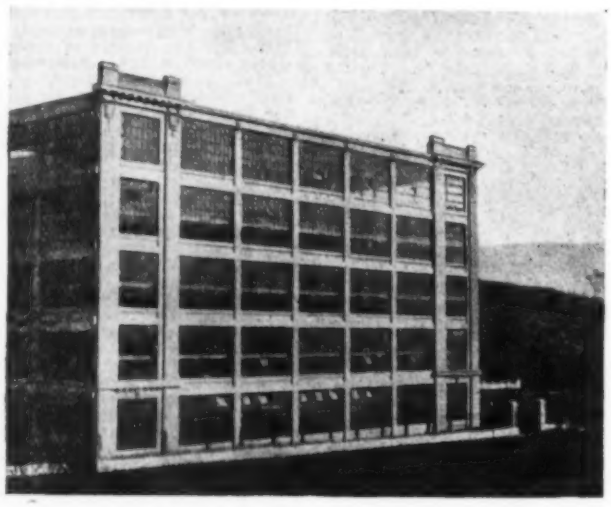
FEBRUARY 14.—**Lambeth.**—ROADS.—For tar-spraying of roads for one year, for the B.C. Mr. B. Cattlin, Borough Engineer, Town Hall, Brixton-hill, S.W.

FEBRUARY 15.—**Islington.**—SEWERS, &C.—For construction and repairs of sewers, drains and gullies, for the B.C. for one year. Mr. C. G. E. Fletcher, Town Clerk, Municipal Offices, Tyndale-place, Upper-street, N.1. Deposit £3 3s.

FEBRUARY 16.—**Greenock.**—ROADS, &C.—Construction of streets and sewers in connection with the Cowdenknowes housing scheme, for the T.C. Office of Public Works, Municipal Buildings, Greenock. Deposit £1 1s.

Reinforced Concrete Specialists

KAHN SYSTEM



"TAME SIDE" CLOCK FACTORY
FOR
Messrs. HIRST BROS. & CO., LTD.,
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Architect: A. J. Howcroft.

Reinforced Concrete Engineers:
The Trussed Concrete Steel Co., Ltd.

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22, Cranley Gardens, South Kensington, S.W.7

FEBRUARY 16.—**Nuneaton.**—SEWAGE WORKS.—Construction of an outfall chamber, additional screening chamber, and detritus tank and screen house, &c., for the T.C. Mr. R. C. Moon, Borough Engineer, Municipal Offices, Nuneaton. Deposit £2 2s.

FEBRUARY 16.—**Seisdon.**—SEWAGE WORKS.—Construction of sewerage and sewage disposal works at Codsall, for the R.D.C. Mr. W. Cannan, engineer, Wombourn, Wolverhampton. Deposit £5 5s.

FEBRUARY 16.—**Tadcaster.**—SEWAGE WORKS.—For works in connection with Barwick-in-Elmet and Scholes sewerage and sewage disposal, for the R.D.C. Mr. H. M. Driver, surveyor, Garforth, near Leeds.

FEBRUARY 17.—**Rowley Regis.**—PLAYGROUNDS.—For surfacing of school playgrounds, for the U.D.C. Mr. Daniel Wright, Clerk, Council House, Old Hill.

FEBRUARY 18.—**Hertford.**—SEWAGE WORKS.—Construction of activated sludge treatment works, for the T.C. Messrs. J. Taylor & Sons, 36, Victoria-street, S.W. Deposit £5.

FEBRUARY 18.— **Hertford.**— WATER MAINS.— For laying 830 yds. of 6 and 4 in. cast-iron water mains, for the T.C. Borough Surveyor, Hertford. Deposit £2 2s.

FEBRUARY 18.—**Linlithgow.**—WATER MAIN.—For laying about 1,500 yds. of 4 in. cast-iron pipes, for the Linlithgow District Committee of West Lothian C.C. Messrs. J. & A. Leslie & Reid, C.E., 72A, George-street, Edinburgh. Deposit £1.

FEBRUARY 18.—**Pontefract.**—GAS MAIN.—For laying gas main in Spital Hardwick-lane, for the T.C. Gas Manager, Gas Works, Pontefract.

FEBRUARY 18.—**Southend.**—ROADS.—For making-up of Nelson-road, for the T.C. Mr. Robert H. Dyer, Borough Engineer, Municipal Buildings, Southend-on-Sea. Deposit £2.

FEBRUARY 18.—**Steyning.**—SEWERAGE WORKS.—For the construction of about five miles of stoneware and concrete sewers, from 6 in. to 12 in. in dia., &c., for the R.D.C. Mr. Geo. W. Warr, Engineer, Town Hall, Southwick. Deposit £3 3s.

FEBRUARY 18.—**Wigan.**—RECONSTRUCTION.—For reconstruction of the Hoscar and Pemberton sewage disposal works, for T.C. Mr. R. B. Donald, Borough Engineer, Municipal Buildings, Wigan. Deposit £3 3s.

FEBRUARY 18.—**Wimbledon.**—ROADS.—For the making-up of Laurel-road, Melbury-gardens (Section 1), Melbury-gardens (Section 2), for the B.C. Borough Engineer, Town Hall, Wimbledon.

FEBRUARY 19.—**Batley.**—EMBANKMENT.—For the construction of an embankment, &c., for the formation of a reservoir, with ancillary works, in the Valley of the River Holme, a few miles from Holmfirth, for the T.C. Messrs. G. H. Hill & Sons, civil engineers, 40, Kennedy-street, Manchester. Deposit £5 5s.

FEBRUARY 19.—**Carlisle.**—BOWLING-GREEN.—For the laying of a bowling-green at Blackwell-road Building Estate, for the T.C. Mr. Henry C. Marks, City Engineer, 18, Fisher-street, Carlisle.

FEBRUARY 19.—**Glasgow.**—ROADS.—For the construction of roads and sewers at Belvidere, Parkhead, for the T.C. Director of Housing, Govan Town Hall, Glasgow.

FEBRUARY 19.—**Maldon.**—WATER MAIN.—For laying 861 lin. yds. of 3 in. cast-iron water main in Goldhanger-road, Heybridge, for the R.D.C. Mr. W. Almond, engineer, 6, Market Hill, Maldon, Essex.

FEBRUARY 19.—**Tottenham.**—ROADS.—For making-up of Vale-road, for the U.D.C. Surveyor, Town Hall, Tottenham, N. Deposit 10s. 6d.

FEBRUARY 20.—**East Lothian.**—WATER MAINS.—Construction of a pipe line between Yester Mains and Haddington, for the East Lothian Western District Water Board. Water Superintendent to the Board, Bank of Scotland Buildings, Haddington. Deposit £2 2s.

FEBRUARY 21.—**Hythe.**—ROADS.—For the removal of a portion of the horse tramway track in Hythe, and making-up the roadway, for the Southern Railway Co. Mr. G. Knight, secretary, Waterloo Station, S.E.1. Deposit £2 2s.

FEBRUARY 21.—**Onllwyn (Neath).**—DRIVAGE.—For drivage of a rise hard heading. The Manager, Onllwyn, No. 3 Colliery, Onllwyn, near Neath (Glam).

FEBRUARY 22.—**Adwick-le-Street.**—SEWAGE DISPOSAL WORKS.—Extensions to the sewage works, for the U.D.C. Mr. George Gledhill, Surveyor, Council Offices, Adwick-le-Street. Deposit £3.

FEBRUARY 22.—**Claypole.**—ROADS.—Supply of material and tar-spraying 50,000 sq. yds. of road. Mr. T. W. Mawer, surveyor, Brant Broughton, Newark.

FEBRUARY 22.—**Letchworth.**—SEWAGE WORKS.—For laying 24 in. and 18 in. outfall, and certain smaller sewers, and the construction of outfall works at Letchworth, for the U.D.C. Messrs. Howard Humphreys & Sons, 28, Victoria-street, Westminster, S.W. Deposit £5 5s.

FEBRUARY 23.—**Chester.**—ROADS.—For making-up Grange-road, for the T.C. Mr. Charles Greenwood, City Engineer, Town Hall, Chester. Deposit £2 2s.

FEBRUARY 25.—**Huddersfield.**—SEWAGE WORKS.—Construction of 800 lin. yds. of 3 ft. diameter U-shaped brick sewer, reinforced concrete tanks, pump house, &c., for the T.C. Mr. W. Jaggar, Borough Engineer, 1, Peel-street, Huddersfield.

FEBRUARY 25.—**Ilford.**—SEWER.—Construction of a sewer consisting of about 209 lin. yds. of 48 in. circular brick sewer, and about 1,790 lin. yds. of 15 in. stoneware pipes with 14 manholes, for the U.D.C. Mr. H. Shaw, Surveyor, Town Hall, Ilford. Deposit £2 2s.

FEBRUARY 26.—**Hailsham.**—ROADS.—For tar-spraying about 30,000 sq. yds. of roads, for the R.D.C. Mr. G. B. Fairchild, surveyor, Hailsham.

FEBRUARY 26.—**Llandyssul.**—NEW ROAD.—For construction of a new road from the District-road to Garthowen Lodge, Garthowen, Llandyssul.

FEBRUARY 29.—**Birkenhead.**—SEWER.—For the construction of 421 lin. yds. of 6 ft. 9 in. by 4 ft. 6 in. brick and reinforced concrete sewer in Livingstone-street, and 580 lin. yds. of 12 in. and 15 in. stoneware pipe sewer and about 182 lin. yds. of 27 in. diameter reinforced concrete pipe sewer in Brook-street, for the T.C. Mr. Chas. Brownridge, Borough Engineer, Town Hall, Birkenhead. Deposit £3 3s.

MARCH 1.—**Montgomeryshire.**—STORAGE RESERVOIR AND WATER MAINS.—Construction of a small storage reservoir, and the laying of a main in connection with an additional water supply, for the T.C. of Llanidloes. Mr. James Grant, Surveyor, Llanidloes, Montgomeryshire.

NO DATE.—**Irvine.**—ROADS.—For the road formation intended for the second development, Parts II and III, of the Bank-street, Irvine, Housing Scheme. Messrs. David Gillies and A. R. Wilson, Joint Town Clerks, Council Chambers, Irvine.

Competitions.

(*See Competition News, page* 210.)

Auction Sales, Tenders, etc.

FEBRUARY 12. — **Bloomsbury.**— Messrs. J. W. Coade, Son, & Budgen will sell, by order of the National Council of Y.M.C.A.s, valuable building materials forming the standing structures known as the Shakespeare Hut, Gower-street, Bloomsbury, W.C.1. It will be offered for sale in one lot on the premises. Auctioneers, 118, Southampton-row, W.C.1.

FEBRUARY 12.—**London, E.C.4.**—Messrs. Henry Butcher & Co. will sell, at the London Auction Mart, 155, Queen Victoria-street, E.C.4, the freehold showrooms, warehouse, or workshops, Nos. 61, 63 and 65, Loanpit Vale, Lewisham, S.E.13. Auctioneers, 63 and 64, Chancery-lane, W.C.2.

FEBRUARY 12.— **Oxted, Surrey.**—Mr. C. E. Clark will sell, without reserve, at Master Park, Oxted, Surrey, timbers and building effects, 300 squares, weather boards, 300 deal four-panel doors, &c. Auctioneer, Beddington House, Beddington, near Croydon.

✱FEBRUARY 13.—**London, W.C.1.**—Messrs. Henry Butcher & Co. will sell, at 14, Elm-street, Gray's Inn-road, W.C.1, the entire stock-in-trade of a tube metal and engineers' merchants. Auctioneers, 63 and 64, Chancery-lane, London, W.C.2.

✱FEBRUARY 14. — **Gloucester.** — Messrs. Bruton, Knowles & Co. are instructed by the Gloucestershire Joint Committee for Tuberculosis to sell, at Standish House, near Stonehouse, surplus building materials, tools, fittings, &c. Auctioneers, Albion Chambers, Gloucester.

✱FEBRUARY 18.—**London, S.E.**—Messrs. Veryard & Yates will sell by order of Messrs. Sir Robert McAlpine & Sons (without reserve) completion of L.C.C. Bellingham Housing Contract, Bellingham, S.E., surplus stores and material of various kinds. Auctioneers, 365, Norwood-road, S.E.27.

✱FEBRUARY 19.—**London, S.W.**—Messrs. Veryard & Yates will sell (without reserve) at 255, Clapham-road, S.W. (close to the "Swan," Stockwell), timber, fittings and building materials. Auctioneers, 365, Norwood-road, S.E.27.

FEBRUARY 21.—**London, N.**—Messrs. Veryard & Yates will sell, without reserve, at 109, Stoke Newington-road, N., a large stock of building materials of various varieties. Auctioneers, 365, Norwood-road, S.E.27.

FEBRUARY 21.—**Orpington, Kent.**—Messrs. W. Levens & Son, F.A.I., will sell by auction (unless previously disposed of by private treaty), by order of the executrix of the late Mr. H. M. Glassup, Orpington, Kent, on the premises, freehold business premises known as "Mayfield Cottage," High-street, together with the goodwill and stock-in-trade of a sanitary engineer and decorator. Auctioneers, Station-approach, Orpington.

✱FEBRUARY 27.—**London, E.C.**—Messrs. Rushworth & Brown will sell, by order of the Liquidator (in voluntary liquidation) *re* Messrs. Clements, Jeakes & Co., Ltd., engineers, at Winchester House, E.C., 10½, 12 and 14, Mackiin-street, Drury-lane, immediately in the rear of the Winter Garden Theatre, Drury-lane, comprising freehold factory premises; area about 10,000 ft. super. Immediate possession. Auctioneers, 22, Savile-row, W.1.

✱MARCH 6.—**East Sheen, S.W. 14.**—Messrs. C. & E. Melville will sell, at the Mart, 155, Queen Victoria-street, E.C. 4, a freehold building site of over 23 acres, at East Sheen, suitable for the erection of 330 small houses, unless previously disposed of. Auctioneers, 155, Queen Victoria-street, E.C. 4.

MAY 6.—**London, W.1.**—Messrs. Knight, Frank & Rutley, at the Hanover-square Estate Room, situate at Wimbledon Common, within half-an-hour by motor of the Houses of Parliament. Freehold, Edgecombe Hall, Beaumont-road; extensive range of outbuildings, in all extending to over 14 acres. Vacant possession will be given on completion of the purchase. Auctioneers, 20, Hanover-square, W.1.

Public Appointments.

FEBRUARY 11.—**Romford, Essex.**—Clerk of Works required in connection with the extension of the Hospital, &c., at the Institution, Romford Union. Mr. Raymond H. Mason, Clerk to the Guardians, Union Offices, The Institution, Romford.

✱FEBRUARY 12.—**Glamorgan.**—JUNIOR ASSISTANT.—Junior assistant required, in the Architect's Department, Western Division, by the Education Committee of the Glamorgan County Council. Mr. W. James Nash, Metropolitan Chambers, Neath.

✱FEBRUARY 12.— **Southall-Norwood.**— BUILDING INSPECTOR.—Building inspector required by the Southall-Norwood U.D.C. Mr. J. B. Thomson, Chartered Civil Engineer, Engineer and Surveyor to the Council, Town Hall, Southall-Norwood.

FEBRUARY 13.—**Harrow-on-the-Hill.**—Town Planning Assistant required in the Surveyor's Department. The appointment will be a temporary one, preference being given to those who hold the Certificate of the Town-Planning Institute. Mr. John Strachan, Clerk to the Council, Council Offices, Harrow.

✱FEBRUARY 14. — **Plymouth.** — ARCHITECTURAL ASSISTANT.—Architectural assistant required by the Borough Engineer of the County Borough of Plymouth, with experience in the preparation of improvement schemes, and in town planning preferred. Mr. J. Wibberley, Borough Engineer, Municipal Buildings, Plymouth, together with copies of three testimonials.

FEBRUARY 16.—**London, E.**—Works Manager required in the Borough Engineer's Department by the Council of the County Borough of West Ham. Town Clerk, Town Hall, West Ham, E.15, together with not less than three recent testimonials.

✱FEBRUARY 22.—**Newmarket.**—Temporary Architectural Assistant required by the Newmarket Urban District Council in connection with their housing scheme. Mr. William H. Eley, Assoc.M.Inst.C.E., Engineer and Surveyor, Council Offices, Godolphin House, Newmarket.

NO DATE.—**Glamorgan.**—The C.C. is to appoint an Architectural Assistant in the County Schools Architects' Department. Particulars of age, qualifications, experience, &c., to Mr. D. Pugh Jones, County Architect, County Hall, Cardiff.

Northern Counties Building Trade Federation.

The Northern Counties Federation of Building Trades has elected Councillor John Carse as President for the ensuing year. Councillor Carse is an Associate of the Institute of Builders, a member of the Institute of Hygiene, and also a member of the Newcastle Society of Antiquaries. The firm of Messrs. R. Carse & Son, builders and contractors, of Amble and Morpeth, of which Councillor Carse is senior partner, was founded in 1848. Councillor Carse, along with other local builders, formed the Midland and Northumberland Master Builders and Allied Trades Association and was its first President. Mr. Carse was elected a member of the Morpeth Town Council in 1922.

Wages in Building.

The National Wages and Conditions Council for the building industry met in London recently, and considered the application of the Operatives' Federation for an increase of 2d. per hour in the wages of all building trade workers.

The operatives ask that the cost-of-living index figure shall be readjusted, and that the provision in the agreement which relates to the base rate or starting point of the sliding scale shall be made to give an automatic advance of 2d. per hour. It is contended that under the operation of the scale wages have been brought down lower than the present cost of living justifies. Several other claims have been made, with the object of removing hardships in working conditions, such as the abolition of differential rates among craftsmen, and particularly painters, who, in some centres, receive 1d. an hour less than other craftsmen.

The council is also considering an application from the men's side to revert to the 44-hour working week. The national agreement has been modified by the arbitrator's award, and the effect of the application, if granted, would be to alter the awards of the arbitrator on hours and wages. Evidence for the operatives was given by Mr. J. Murrey; and for the employers by Messrs. H. T. Holloway, H. Blackman, and F. A. Wall.

"Quantity Surveying for Builders."

Messrs. Chapman & Hall, Ltd., write us in reference to our review of Mr. Evershed's book ("Quantity Surveying for Builders") in our issue of January 18, as follows:—

"We have perused with much interest the review of our new publication, 'Quantity Surveying for Builders,' by Mr. Evershed, which was in your issue for January 18. There is one small point that we should like to mention. We believe that the reference therein to clerical errors in examples Nos. 31 and 32 concerns the 'dotting' of certain ciphers. By an unfortunate accident on the part of the printers these dotted ciphers dropped out during machining, and as the author had checked them in the press proofs he, of course, had no control in the matter. He noticed it immediately copies reached him, and we have had a cancelled sheet printed, as shown by the enclosed, so that all copies now on sale are correct. We regret that we were not in time, however, to send these out to the reviewers."

PROPOSED NEW BUILDINGS & OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERYSTWYTH.—Plans passed by R.D.C.: Cottage, Bow-street, for Mr. F. Green; house, Borth, for Mr. A. Ross, Birmingham.

AMPTHILL.—Plans passed by R.D.C.: Flitton, house, Mr. Frank Sharpe; Silsoe, house, Mrs. A. L. V. Harris; Flitwick, house, Mr. A. Huckle; Maulden, two houses, Mr. J. Northwood; Houghton Conquest, house, Mr. C. A. Hodgson; Harlington, two houses, Mrs. J. C. Ward; Harlington, four houses, Mrs. A. Giles; Westoning, house, Mr. E. Kitchiner.

ARDSLEY.—Plans passed by U.D.C.: Bungalow at Bradford-road, Tingley, for Mr. H. Bradshaw.

AYR.—The Dean of Guild Court has passed the following plans: Scottish Motor Transport Co., Kilmarnock, buildings, Sandgate-street, Ayr; William Drinnan, builder, three double cottages, Whitletts-road; Corporation of Ayr, experimental bungalow, Woodfield-road.

BATH.—Plans passed by T.C.: Bungalow, Englishcombe-lane; house, Bloomfield Park; showrooms, &c., Cheap-street and Union-passage; eight houses, First-avenue; three shops, Bradford-road; shop, Tyning-lane; bungalow and private road, Winifred-lane; new road, off Newbridge-road; houses, Bloomfield Park-road; bungalow, off Newbridge-road.

BEDWELLTY.—The U.D.C. is considering the provision of a fully-equipped fire station at Blackwood to serve the Sirhowy Valley.

BELPER.—Plans passed by U.D.C.: Bungalow, Spencer-road, for Mrs. G. E. Ford; house, Green-lane, for Mr. Strutt; house, Spencer-road, for Mr. J. E. Melbourne; house, Spencer-road, for Mr. R. Stringfellow; house in Marsh-lane, for Mr. Hy. Spencer.

BINGLEY.—Plans passed: Villas at Park-road, Bingley, for Messrs. D. Wildman & Son; house at Station-road, Wilsden, for Mr. H. Drake; two bungalows at Cottingley Moor, for Mr. Broadbent; bungalow at Dowley Gap-lane, for Mrs. L. Thackeray.——The Surveyor has been instructed to obtain tenders for the construction of a footbridge across the River from Myrtle Park to Beckfoot; also to invite tenders for the erection of 2 houses on the Council's land at Low Laithe Farm.

BIRSTALL.—Plans passed by U.D.C.: Conveniences for Irish National League Club, High-street; house, Bradford-road, for Mr. John Oldroyd; shop, Bradford-road, for Mr. John Oldroyd; two semi-detached, houses, Cambridge-road, for Mr. Charles Ramsbottom.

BLACKPOOL.—Plans passed by T.C.: New streets, Westcliffe-drive, J. Fielding & Sons (Blackpool), Ltd.; new streets, Frederick-street, Armitage & Midgley; two houses, Lyndhurst-avenue, J. E. Wright; four houses, Burlington-road, E. & M. Crombleholme; four houses, St. George's-avenue, Staunton Bros.; eight houses, Dale-avenue, Bryning & Done; two bungalows, off Layton-lane, E. Wright; six houses, St. Alban's-road, G. Francis; twelve houses, Saville-road and Maudland-road, E. Saville; two houses, Canterbury-avenue, Moore & Durham; house, Burgate, J. Denbigh; house, Queen's-drive, Bispham, H. A. Blackwell; house, Westmoreland-avenue, Hardman & Hamar; two houses and garages, Leamington-road, J. Taylor; six houses, Grenfell-avenue, E. Mason; eight houses, Grange-road, E. Mason; two bungalows, Gosforth-road, T. & C. Hilton; house, Lincoln-road, H. Thompson; six houses, Grange-road, E. Mason; two bungalows, Summerville, Ashworth & Ford; four houses, Collingwood-avenue, H. H. Vickers; four houses, Abbey-road, J. Foster; bungalow, Burgate, Kay & Fisher; bungalow, Bloomfield-avenue, C. A. Clarke; two bungalows, Thirlmere-road, H. D. Whiteside; house, Hesketh-place, Bispham, G. H. Dewhurst; nine houses, Ord-avenue, J. B. Hide; new streets, Fir-grove, Whitegate Brick Co.; two houses, Second-avenue, H. J. Marsden; two houses, Warbreck-drive, W. Hutton; five houses and garages, Westmoreland-avenue, B. Small; bungalow, Piccadilly, H. B. Jaffa; six houses, off Frederick-street, Armitage & Midgley; twelve houses, Laurel-avenue, J. Gregson; three houses, Kirkstall-avenue and New-road, J. Gregson; twenty-two houses, Gorse-road, Roberts-street and Woodland-grove, Park Estate Syndicate; three houses, Laurel-avenue and New-road, J. Gregson; two houses, Manor-road, H. F. Keighley; two houses, Romney-avenue, G. Whiteside; alterations to shop, Lytham-road and Bournemouth-road, Hargreaves & Emery; lavatory accommodation, 8 and 9, Central Beach, T. Collinson & Son; alterations and additions, Abingdon-street and Clifton-street, H. Hunter, Ltd.; alterations, 13, Abingdon-street, J. Whitehead; shop windows, Caunce-street and Moister-road, Miss S. E. Wakelin; addition, Queen Victoria-avenue and Balmoral-avenue, G. H. Coop; alterations, 9, Dale-street, T. Cook; alterations and additions, 19, Market-street, F. Tipping; alterations, 18, Lowrey-terrace, Mrs. J. Dagg; alterations, 31, Lonsdale-road, G. Dale; bungalow, Norbreck-road, J. Marsden.

BOSTON.—The R.D.C. at its last meeting approved a contract for the purchase of additional sites at Leverton, Butterwick, and Bicker. Plans were also approved for a number of houses in the district to be built by private enterprise, and certificates issued.

BRADFORD.—The Corporation is making application to the M.T. for sanction to the borrowing of £126,591 for the reconstruction of various tram tracks in the city.

BRECONSHIRE.—Intimation has been received by the C.C. that M.T. will sanction the borrowing of £10,000, and will make grant of £10,000 for re-surfacing of County main roads. The Ministry will also make grant of 50 per cent. of cost of the Llwynon-road improvement (estimate £3,000), and similar proportionate grant toward the cost of widening Builth bridge.

BRIDGEND.—Plans passed by U.D.C. are as follows: House and premises in Angel-street and Sunnyside, for Mr. Gwilym Jones, Bridgend; house in Grove-road, for Mr. P. Gaylord.—The Council is negotiating to acquire two fields for housing purposes at Pendre.

BRIDLINGTON.—The Corporation has approved of a scheme for the construction of a new bathing pool on the site of the present dance-floor and skating-rink. The estimated cost of the scheme is £6,000.

BROMLEY.—Plans passed by R.D.C.: Bungalow at Victoria-gardens, Cudham, for Messrs. Smith & Sons; bungalow at Polesteeple-hill, Cudham, for Mr. F. Gough; bungalow at Sunningvale-avenue, Cudham, for Miss A. B. Spencer; bungalow at Sutherland-avenue, Cudham, for Mrs. L. E. Murphy; house, Wickham-road, West Wickham, for Mr. E. H. Crease; two houses at World's End-lane, Chelsfield, for Mr. A. Rickards.

CARMARTHENSHIRE.—The M.H. inspector has recommended approval of construction of a new bridge over River Towy by the T.C.——Plan for a house to be erected for Mr. T. Davies, Vron, Henllan, has been submitted to Llandyssul Council.—The Kidwelly Council has decided to at once proceed with section of war memorial.

CHELMSFORD.—The Borough Engineer has been requested to prepare a report on the erection of a block of eight houses and two blocks of four houses each.——Plans passed: Six pairs of houses, Finchley-avenue, for Messrs. W. Fincham & Son; building lay-out, Coval-lane, for Messrs. Davis & Gibbons; house, Cedar-avenue, for Mrs. H. G. Saunders; house, Galleywood-road, for Mr. L. S. Bragg; house, Loop-road, for Mrs. N. G. Bradridge; bungalow, Tower-avenue, for Mr. A. E. Davis; lock-up shop, Rainsford-road, for Mr. L. J. Hazelton.

CHORLEY.—The Ministry of Health has approved the erection of 40 additional houses by the T.C.

CLEETHORPES.—A secondary school is to be built by the Lindsey C.C.

CLIPSTONE.—A school, estimated to cost £15,000, is proposed by the Notts C.C.

COVENTRY.—The T.C. proposes to carry out extensions at the Central Library, at a cost of £3,000.

CROFT.—The R.D.C. has decided to ask the M.H. for approval for the erection of houses in their area under the subsidy scheme.

CROSBY.—The Lindsey C.C. is to erect an elementary school.

DARLINGTON.—The R.D.C. has passed plans for the erection of 27 houses as follows: Four houses, Neasham-road; bungalow, Salter's-lane; 12 houses, Middleton-one-Row; semi-detached house, Middleton-one-Row; villa, at the same place; four houses, Yarm-road; four houses, Denton.——The Council also approved the erection of an Institute for Low Coniscliffe, and has decided to apply for subsidy in respect to 50 houses.

DENABY.—It is proposed to extend both the men's ward and the women's ward, and to add a children's ward with other accommodation to the Fullerton Hospital.

DORSETSHIRE.—The Standing Joint Committee has decided to erect houses for policemen at Tarrant Hinton, Netherbury, Powerstock, Corscombe, Cattistock, Puddletrenthide, Puncknowle, Broadmayne, Bishop's Caundle, and Preston, as soon as sites are acquired.

DUBLIN.—It is proposed to renovate the City Hall at a cost of £6,000.

DUDLEY.—Plans passed by T.C.: Mr. A. J. Crump, seven houses, Himley-road; Mr. J. Potter, four houses at the corner of Himley-road and Park-road.

DUNDEE.—Plans and sections of proposed new buildings, &c., in Dundee have been lodged at the office of the City Engineer.:—Perth-road, dormitory for Trustees of the late T. W. Thoms; Perth-road, alterations for the Dundee Combination Parish Council; Strathmartine-road, store for the Dundee Eastern Co-operative Society, Ltd.

DURHAM.—The C.C. expenditure, amounting to £90,000, was approved for the improvements of roads and bridges, and the construction of new bridges. The education authorities have submitted to the B.E. a detailed list of proposed expenditure for the required repairs and renewals at their schools. This sum, amounting to £114,109 includes for the erection of a new secondary school at Houghton-le-Spring, with accommodation for 350 scholars, estimated cost of construction is £28,000 and cost of furnishing £4,500.——Durham County Council have adopted recommendations from the Education Committee for the proposed erection of new schools, at costs as under: Elementary—Thornley, £9,803; Hunwick, £7,666; Merrington, £4,000; West Cornforth, £5,500; Bewick Maine, £2,500; Easington-lane, £14,000; Delves-lane, Consett, £4,700; Graythorpe, £2,250; Leamside, £9,000; Boldon, White Leas, £4,160; Fishburn, £6,000; Coundon, £7,500; Ludworth, £5,000; Billingham, £2,250; Monkton, £4,000; Usworth Colliery, £700; Silksworth, £6,000; remodelling and enlarging Sunniside Council School, £5,500; Benfieldside Council School, £8,580. Secondary schools—Houghton-le-Spring, £32,500; school sites at Wellfield and Hookergate, £4,000; playing fields extensions at Jarrow, £1,050; repairs and improvements, Tanfield Lea, £1,500; Bishop Auckland Grammar School, £1,000.

GLASGOW.—Linings granted by Dean of Guild Court: Maryhill Unionist Association, hall and offices, Saracen-street, Possilpark; Acme Tea Chest Co., Ltd., aluminium factory, Polmadie-road and Jessie-street; Clydesdale Bank, Ltd., alterations to form bank premises, Newlands-road and Clarkston-road; Garscube Colliery Co., Ltd., house, corner of Crosbie-street and Barra-street, Maryhill; James Paterson, 95, Minard-road, Shawlands, bungalow, Fernleigh-road, Newlands; Corporation Housing Department, to erect dwelling-houses and form roads and sewers at Moss-road, Merryflatts; John Caldwell, builder, 290, Kilmarnock-road, Newlands, two double villas, Monreith-road and Langlands-road.

GLOUCESTER.—Plans passed by T.C.: 18 houses, Calton-road, for W. T. Nicholls, Ltd.

GOWER (GLAM).—Funds are being raised for the proposed erection of a public hall to serve Middleton and Rhosilli villages.

GUILDFORD.—Plans passed by T.C.: Two houses, Abbotswood, by Mr. A. C. Burlingham, for the Onyx Property Co.; house, Mareschal-road, by Mr. F. H. Billmore, Tunsgate, for Mr. Fergus, 22, Woodbridge-road; four parlour houses and two bungalows, Litchfield Way, Onslow Village, by Messrs. Knapp-Fisher, Powell, & Russell, Westminster, S.W.1, for Onslow Village, Ltd.; bungalow, Stocton-road, by Messrs. Clemence & Co., for Mr. P. F. Benstead, 39, Farnham-road; house, Woodbridge-road, by Mr. John Lake, Croft-road, Godalming, for Mr. S. E. Rule, 32, Church-road; house, Millmead Crescent-road, by Messrs. Knapp-Fisher, Powell, & Russell, for Mrs. Wheeler, 4, Rectory-place, Guildford; house, London-road, by Messrs. Tomkins, Homer, & Ley, for Mr. H. M. Budgett; bungalow, Aldershot-road, by Mr. J. H. Norris, 51, High-street, for Mr. H. T. Hencher, Farncombe; house, Joseph-road, by Messrs. H. Knight & Son, 16, Bruce-grove, Tottenham, N.17, for Mr. Stanley Shaw, 2, Armstrong-villas, Worplesdon-road; four houses, Old Farm-road, by Messrs. Chalcraft & Goodchild, 35, New Broad-street, for Mr. A. E. Woodhatch, North-street; house, Nightingale-road, by Mr. E. W. Mountford, 35, Bedford-row, for Dr. Weaver, Waterden-road; house, Glebe House Estate, London-road, by Messrs. J. Rutter & Co., Woodbridge-road; house, Stoke-road, by Mr. N. Nichols, 1, South-road, Stoughton; five pairs of dwelling-houses, Bray-road, by Messrs. Hodgson, Lunn & Co., High-street, for Messrs. F. W. Westlake & J. Mackie; pair of houses, Worplesdon-road, by Messrs. Hodgson, Lunn & Co., for Mrs. A. Butcher, 25, King's-road, Guildford; house, Avonmore-avenue, by Messrs. Frampton & Co., 75, North-street, for Mr. Leonard, Woodbridge-road; house, Mareschal-road, by Mr. L. R. Hiscock, for Mr. B. F. Farris, Wodeland-avenue.

HALIFAX.—Plans passed by the Building Committee: Erection of new banking premises for the National Provincial Bank, Ltd., at the junction of Waterhouse-street and New Crown-street.——The Housing Committee have instructed the Borough Surveyor to invite tenders for the erection of 50 brick-faced and stucco houses to complete the Nursery-lane scheme; also for 62 brick-faced and stucco houses to complete the Booth Town housing scheme.

HASTINGS.—Plans passed by T.C.: Two pairs semi-detached cottages, Bexhill-road, Mr. F. Tanton, owner, per Mr. H. Rundle Harness, architect; tea room, 91, Queen's-road, Messrs Dimarco Bros., owners, per Mr. H. M. Jeffrey, architect; bungalow, Downs-road, Mr. J. Brown, owner, per Mr. J. Hunt, architect; consulting room, &c., at "Rockholme," Quarry-road, Dr. Charnock Smith, owner, per Messrs. Chapman Brothers; chapel at Convent of N.D. des Missions, corner of Old London and Ashburnham-roads, Rev. Mother General N.D. des Missions, owner, per Mr. J. S. D. Hicks, architect; two bungalows in Middle-road, Ore, Mrs. Trowell and Mrs. Flux, owners, per Mr. J. Hunt, architect.

HAWORTH.—Additional school accommodation for 400 scholars, to cost £9,000, has been decided on by the Notts C.C.

HAYFIELD.—An enquiry by the M.H. has been held into the application of the R.D.C. to borrow £14,300 to supply Mellor with water.

HERNE BAY.—The U.D.C. has decided to make application to the Government Departments concerned for sanction to borrow a comprehensive loan of over £19,000 for completion of the sea wall, increased lavatory accommodation, re-decking of the Pier, and the laying down of tennis courts, a bowling green, and a miniature golf course in the War Memorial Park. They have also decided to apply for a loan for dealing with the tramway and tram on the Pier.

HETTON.—The U.D.C. has passed plans for two pairs of bungalows near the "Three Tuns" Inn for Mr. J. M. B. Doxford.—The M.H. has approved of the Council erecting 25 houses.

HORNSEY.—Plans passed by B.C.: Six houses, 22 to 32, Park-avenue South, Hornsey, Mr. John Farrer; house at Hampstead-lane, Mr. E. S. Barr.

HUNSDON.—The Herts C.C. has approved of the plans by the County Surveyor for an elementary school at Hunsdon, estimated to cost £3,767.

HURSLEY.—Plans passed by R.D.C.: Bungalow, North End-road, for Mr. P. Rook; house, Ford-road, for Mr. Matthews; house, North End-road, for Miss L. C. Faithful; bungalow, Baddesley Common, Chandler's Ford, Mr. Harvey; bungalow, Baddesley Common, Mrs. Booth; bungalow, Baddesley Common, Mr. C. Latham; factory, Allbrook Brickyard, for Eastleigh Brick Co.

LEEDS.—The Yorkshire Penny Bank, Ltd., have acquired a range of shop property in Kirkgate, Leeds, recently occupied by Messrs. Cookes, for the conversion of these into banking premises. Plans have been prepared and tenders are about to be invited for the work. The architects are Messrs. Chorley & Gribbon, Leeds.

LIVERPOOL.—Sanction to borrow £75,000, in connection with the payment of subsidies for 1,000 houses under the Corporation scheme for assisting private enterprise, is being sought by the Housing Committee.

* See also our List of Contracts, Competitions, etc.

LLANELLY.—Plans approved by B.C. Health Committee: Two houses in approach to Stradly Park, for Messrs. Pullin & Jones; four houses in Bradford-street, for Mr. T. G. Mends; plan for house for Mr. D. T. Edwards at Penyfanfach, was referred for amendment.—The B.C. has requested Surveyor to report on possibility of erecting tenement houses. The M.H. has sanctioned the advancing of sums aggregating £10,000 to applicants building under Small Dwellings' Acquisition Act.——The B.C. is negotiating for a four-acre site on which to erect new public slaughter-house.

LLANTRISANT.—The Council has decided to apply for sanction to borrow £7,250 for Tynant-street improvements and £2,000 under Small Dwellings Acquisition Act provisions.

LONDON (BERMONDSEY).—Plans passed by B.C.: Factory, Tower Bridge-road, G. Parker & Sons, for S. H. & W. Hart.

LONDON (CAMBERWELL).—The managers of the English Martyrs' R.C. School have given notice of their intention to erect a new school in Herring-street to accommodate 380 children.

LONDON (FINSBURY).—The B.C. is to construct a new street from Rosoman-street to Wilmington-square.

MALTON.—A commencement is shortly to be made of the scheme for the development of Malton by Earl Fitzwilliam. His Lordship proposes to lay out a building estate near Middlecave-road, and there will be space for the erection of 120 houses. The U.D.C. has approved plans of the first house, and they were asked to carry out the work of construction of the roads and sewers at the expense of the earl.

MANCHESTER.—The Libraries Committee proposes to expend £1,500 on the provision of steel shelving at the Central Library.——Plans passed: Alterations to premises, Ardwick Green North; addition to works, Chatham-street, Clayton; alterations to works, Chatham-street, Clayton; additions to premises, 172-174, Hyde-road and Oakfield-avenue, Gorton; additions to premises, Hyde-road, West Gorton; additions to premises, 62, Victoria-street and Fennel-street; garage and repair depot, Jackson's-row and Bootle-street; warehouse to house, Sherdley-road, Crumpsall; additions to premises, Mount Pleasant, Cheetham; alterations to premises, Waterloo-road and Beech-street, Cheetham; warehouse, George Leigh-street, Henry-street and Cotton-street, Ancoats; offices, Blackfriars-street and The Parsonage; dwelling-house, Palatine-road, Didsbury; conversion of shop and house, 153, Mount-road, Gorton; additions to Victoria Baths, Bax-road, Chorlton-upon-Medlock; alterations to "Grove Inn," 378, Stockport-road, Chorlton-upon-Medlock; additions to bakery, York-street, Chorlton-upon-Medlock; two houses, Ryebank-road, Chorlton-cum-Hardy; addition to Withington Girls' School, Wellington-road, Withington; 68 houses, Finchley-road, Brocklebank-road and Barnsfold-road, Rusholme; shop, Wilbraham-road, Chorlton-cum-Hardy; additions to "Sherwood Inn," Claremont-road and Union-street, Rusholme; alterations to "Three Arrows Inn," 47, Hyde-road, and Church-lane, Gorton; workshop, garages, &c., Darley-street, Freda-street and Havana-street, Beswick; garage and store, Buxton-street, London-road; alterations to premises, 49-51, Cross-street, Gorton; alterations to the "Pine Apple" Hotel, Gorton-road and Pine Apple-street, Openshaw; addition to house, Old-road, Blackley; house, Hill-lane, Blackley; alterations to premises, King-street West, Southgate, and back Bridge-street; alterations to the "Crown and Anchor" Hotel, Cateaton-street; alterations to premises, Mount-street; house, Old Hall-lane, Rusholme; alterations to premises, 53, Oxford-road, Chorlton-upon-Medlock; additions to house, 25, Cringle-road, Levenshulme; two houses, Kingsway-avenue, Rusholme; six houses, Circular-road, Withington; six houses, Longford-place, Victoria Park; Baptist Chapel, Wilbraham-road, Rusholme; additions to premises, 137, Moss-lane East, Moss Side; additions to house, St. Werburgh's-road, Chorlton-cum-Hardy; additions to premises, 94, Oxford-road, Chorlton-upon-Medlock.

MONMOUTHSHIRE.—The Pontypool U.D.C. has now decided, conditionally, to proceed with scheme for widening of George-street "bottle-neck" to 45 ft., at an estimated cost of £35,000, including sites acquisition costs.——The accepted tender (£3,825) for erecting offices for the Pontypool B.G. having been withdrawn, the Board has decided to re-invite tenders for the work.——The Blaenavon U.D.C. intends putting in hand work of reconstructing No. 4 reservoir before the end of March, and to borrow £2,950 in order to carry out Forge Side sewerage scheme.——At a meeting of the Monmouthshire Mining Education Committee it was decided to recommend that five mining institutes be established in the county. The Committee was informed that a grant by the Miners' Welfare Fund of £35,000 would probably be made to further the mining education scheme.—A public inquiry is to be held on the application made by Abersychan U.D.C. for sanction to borrow £5,500 for electricity works extensions.

MUSSELBURGH.—A scheme for the reclamation of the foreshore is being seriously considered by the T.C. Plans have been prepared by Messrs. Blyth & Blyth, civil engineers, which include for a sea-wall 2,150 yards long and 1,000 feet of banking behind to enclose 120 acres of foreshore. The estimated cost of the scheme is £45,396.

NEWCASTLE-ON-TYNE.—Vernon Heaton & Co., tailors, have taken over 45 and 47, Grainger-street, and intend to entirely reconstruct the premises.

NEWPORT (MON).—The B.C. has approved plans submitted by the Surveyor for private street works at Jebbo-street, and will proceed with work recommended.

NEW QUAY (CARDIGAN).—The Memorial Hall Committee is about to invite tenders for the construction of the hall.

NORTHAMPTON.—Plans passed by T.C.: Alterations to premises, St. George's-street, for A. Payne & Son; seven houses, Delapre-crescent, for E. H. Tibbs; garage, 455, Weston-road, for Dr. Lilian Blake; house, St. George's-avenue, for A. J. Letts; alteration to premises, Gold-street and The Drapery, for Boots Cash Chemists, Ltd.; house, Park-avenue South, for Arnold Dickens; motor garage, Sandringham-road, for S. J. Soutar; new front to factory, St. Michael's-road, for R. E. Tricker & Co.; house, Thursby-road, for R. G. Bailey; house, Kingsthorpe-grove, for W. Cole; house, Cedar-road, for W. A. Cumberpatch; house, Cedar-road, for T. Phillpot; house, Clarence-avenue, for J. W. Stutley; workshop, St. James'-road, for D. F. Gibson; bakehouse, Purser-road, for A. Valentine; house, Delapre-crescent, for W. A. Whiting; house, Kingsthorpe-road, for J. B. Clarke; house, St. Andrew's-road, for —. Gammage; alterations to premises, 9-11, Ivy-road, for A. E. Tuckley; additions to workshops, Broad-street for C. Finnegan; alterations to premises, 27a, 27b, 29, 29a, Abington-street, for J. Jelley; house, London-road, for Sale & Co.

NOTTINGHAM.—The Housing Committee has received an application from Mr. H. H. Goodall and a syndicate for the purchase of 22,930 sq. yds. of the Sherwood housing estate (so far undeveloped) for the erection of 70 houses.

OGMORE.—The Council has received sanction to obtain loan of £10,000 for disbursement under Small Dwellings Acquisition Act.——The Council recently applied for sanction to erect 200 houses; assent has been given by M.H. to erection of 50 houses. The Council has decided to apply to the new Minister for sanction to proceed with the remaining 150 houses.

OLDHAM.—Plans passed by T.C.: W. Makin, cottage bungalow, Meadow-lane, Hollins Green; A. Kershaw, five houses, Melling-road; Trustees, Manchester-street Wesleyan Church, lavatories, &c., Manchester-street Wesleyan Church.

PEMBROKESHIRE.—The Fishguard U.D.C. has received the following applications for subsidy grants, in respect to houses proposed to be erected: For up to fifteen houses to be erected, for Mr. D. Morgan, Brodog; five houses at Lower Town, for Mr. D. John, Market-square; one house each for the following. Messrs. J. C. Richards, Greenland; H. Richards, Brynhyfryd; J. Brinn, Windy Hall; T. W. Davies, Slade; A. J. Phillips, Clive-road; John Thomas, Kensington-street.—The Fishguard U.D.C. has passed plans as follows: Bungalow, for Mr. Purcer, Slade; warehouses, for Mr. B. Miles Thomas, West-street.—The County E.C. has decided to carry out alterations at St. David's Council School.—The Council will spend surplus money from road works as follows: Improvement of road from Belle Vue Hotel, at estimated cost £200, and repairs to Merlin Hill, at estimated cost £235.——Plans passed by Milford U.D.C. are as follows: two houses, for Mr. B. Blockwell, Stratford-road; house, for Mr. W. Davies, Shakespeare-avenue.——Tenders are to be invited for supply of stone for highways, for a period of twelve months.——The Pembroke R.D.C. has passed the following plans: Bungalow, for Mr. F. Mills, Llanstadwell; bungalow, for Mr. Glover Thomas.

RHOS-ON-SEA.—The original plans for the erection of a new infants' school are likely to be amended, as the local Ratepayers' Association is urging the Denbighshire C.C. to increase the proposed accommodation from 200 to 500, owing to the growing needs of this new residential district.

RIPON.—The T.C. has approved the lay-out of the Malorie Park Estate.

SADDLEWORTH.—The U.D.C. are asking the M.H. for sanction to erect 50 houses at Cobler's-hill, Delph.

SALFORD.—Plans passed by T.C.: Alterations to sanitary accommodation, Albert Park Inn, Duke-street, Broughton; construction of retaining wall in Bury New-road and Clifden-lane, Broughton; rewinding room, King's Picture House, Regent-road, Salford; billiard hall, 223, Chapel-street, Salford; garage and stores, Bird-street, Pendleton; conversion of dwelling house into three flats, 311, Bury New-road, Broughton; construction of electricity sub-station, Silk-street, Salford; boiler house, Wallness-lane, Salford; sanitary accommodation, Butcher's Arms, Cross-lane, Salford; sanitary accommodation, "Railway House," 185, Oldfield-road, Salford; drainage system for 38 dwelling houses, Littleton-road Housing Estate, Broughton; extension of boiler house, Cook-street, Salford; warehouse, Hereford-street, Salford; alterations to "The Big Fiddle," William-street, Salford; Grey Mare Inn, 3, Cannon-street, Salford.

SCARBOROUGH.—The Harbour Commissioners have decided, subject to the necessary financial arrangement being made with the Corporation to carry out immediately extensions and repairs to the West Pier at an estimated cost of £3,830.

SCUNTHORPE.—The Lindsey C.C. proposes to build a secondary school.

SHIPLEY.—The U.D.C. has granted the subsidy in respect of sixteen houses in Wharncliffe-road, for Mr. A. C. Marsden; and twelve houses in Coppy-road, for Messrs. William Pitts & Sons.

SOUTH SHIELDS.—Plans passed by T.C.: Mr. F. W. Newby for Mr. Gifford Brown, extension of premises at corner of Frederick-street and Barnes-road; Mr. John Riddick for Messrs. W. J. Robertson & Sons, semi-detached houses (No. 4), Tynedale-road. Westoe.

SOUTHAMPTON.—The Town Hall Committee of the Corporation has deputed a sub-committee to consider and report upon the provision of a Town Hall, Council House, Municipal Offices, and other necessary buildings.

SPALDING.—It has been decided by the Holland E.C. to extend the Grammar School at a cost of £3,000.

STOCKTON.—Plans passed by T.C.: Pair of bungalows, South-road, Norton, for Messrs. E. J. Whitaker & T. E. Bashford; bungalow, Darlington-lane, for Mr. Williams, of Grange-avenue, Norton; groundsman's house, Oxbridge-avenue, for the Stockton Cricket Club; alterations to premises at the corner of Dovecot-street and Wilson-street, for the executors of Mr. A. Bloom, of Middlesbrough.

WALLASEY.—Plans passed by T.C.: Four streets and 36 houses in Orrell-road and Magazine Brow, for Messrs. Harrocks Brothers, Fisher & I. R. Arthur; garage in Harrison-drive, for Mr. W. H. Stears; garage, 139, Wallasey-road, for Mrs. E. Lazzolo; ballroom, four shops and lavatories in Poulton-road, for The Assembly Rooms (New Brighton), Ltd.; extension to shelter at the Tower Grounds, for the Wallasey United A.F. Club; stage and dressing rooms at "The Cosmo" Picturedrome, Wallasey Village, for Mr. F. V. Ross; alterations, 80, Borough-road, for Mr. William Cleasby; two houses, Willoughby-road, for Mr. J. Henshaw; house in Claremount-road, for Mr. G. A. Lindley; five shops and houses in Wallasey-road and Loretto-road, for Mr. W. Lloyd Jones; five shops and houses and garage in Wallasey-road and Marlowe-road, for Mr. W. Lloyd Jones; alterations and additions, 262 and 264, Liscard-road, for the Birkenhead & District Co-operative Society, Ltd.; 17 houses in Willoughby road, for Mr. J. P. Jones; 17 houses in Willoughby-road, for Mr. J. P. Jones; six shops and houses in Mill-lane between Leominster-road and Dinmore-road, for Mr. J. W. Bradshaw; six houses in Station-road, for Mr. W. Stocks; alterations to Lifeboat House, Egerton-street, for The Royal National Lifeboat Institution; house in Thirlmere-street, for Messrs. T. A. & E. A. Burrows.

YORK.—The Health Committee has prepared an improvement scheme under which it will schedule an area of slum property extending from George-street to Hope-street, between Walmgate and the city wall, as an unhealthy area. It is proposed to demolish the buildings when acquired as equivalent accommodation is secured elsewhere for 805 persons. The estimated cost of acquiring the land and buildings is £7,522, and for erection of dwellings for re-housing, land, roads, and sewers, £73,890—a total of £81,412.

FIRES.

HARTLEPOOL.—Damage to the extent of about £5,000 has been done by a fire at the pattern storing shed at Messrs. Richardsons, Westgarth & Co.'s Hartlepool Engine Works.

HUNTINGDON.—The extensive motor-body works of Messrs. Maddox & Sons, have been burned out, the damage amounting to between £30,000 and £40,000.

SOUTHPORT.—Thousands of pounds worth of damage was recently done by fire at Scarisbrick Hall, near Southport, the residence of Sir Talbot Scarisbrick.

THE RATING BILL AND THE L.C.C.

THE Reports of two Committees of the London County Council, the Finance Committee and the Local Government Committee, were referred to in *The Times*, January 29, and from the very brief report contained in *The Times* it appears that the latter Committee reports that the proposal to adopt that part of the London system whereby the gross value is made conclusive for the assessment of income tax, schedules A and B, should not be extended throughout the country without important modifications. The full report will be awaited with interest, but this expression of opinion appears very important, seeing that London at present is the only area where such a system is in force.

This Report, like that of the Land Owners' Association, which we referred to in our issue January 18, approves the abolition of parochial rating, whereas the Poor-Law Unions Association (see *The Builder*, December 14) objected to this but seemed tacitly to accept the one common assessment for rates and income tax. The Land Owners' Association, inferentially at least, disapproved of the common assessment, and therefore appears in agreement with the Local Government Committee on this point. Another important point on which the two latter reports appear in agreement is as to the rating of owners, at least, so we gather, from the summary of the Report, but it is not very clearly expressed. The Land Owners' Association deprecated the extension of any system rating owners instead of occupiers, but on this point the summary of the Report of the Local Government Committee is worded as follows:—"That amendment of the law relating to the rating of owners instead of occupiers is imperative," and we take this to mean that occupiers should be rated.

Stolen Mails.

Owing to the mails, which were delivered to Essex Wharf, Canning Town, on the afternoon and evening of February 2nd, having been stolen, Messrs. J. H. Gankey & Son, Ltd., ask those who wrote to them at that time to repeat their communications, if necessary,

The Institute of Builders.

The annual dinner of the Institute of Builders will take place at the Hotel Victoria, Charing Cross, on February 27, at 7 p.m.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	3 19 0
Second Hard Stocks	3 14 0

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Fletton, at King's Cross	2 13 3	Best Blue Pressed Staffs.	9 0 0
Do. grooved for plaster	2 15 3	Do. Bullnose	9 10 0
Do. Bullnose	3 8 3	Blue Wire Cuts	7 0 0
Best Stourbridge Fire brick:—			
2½ in.	11 3 0	3 in.	13 2 0

GLAZED BRICKS—

Best White Ivory, and Salt Glazed Stretchers	22 0 0	D'ble Str'tch'rs	30 10 0
		D'ble Headers	27 10 0
Headers	21 10 0	One Side and two Ends	31 10 0
Quoins, Bullnose and 4½ in. Flats	28 10 0	Two Sides and one End	32 10 0
		Splays and Squints	30 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super	2 0	3 in. per yd. super	2 11
2½ in. "	2 6	4 in. "	3 6

	s. d.		
Thames Ballast	10 6	per yard.	
Pit Sand	14 9	" "	delivered 2 miles radius Paddington.
Thames Sand	15 6	" "	
Best Washed Sand	15 6	" "	
¾ in. Shingle for Ferro-Concrete	14 0	" "	
¼ in. "	15 0	" "	
¾ in. Broken Brick	10 6	" "	
Pan Breeze	5 6	"	

Per ton delivered in London area in full van loads.

Best Portland Cement, British Standard Specification Test £2 18 0 to £3 3 6	
51/- alongside at Vauxhall in 80-ton lots.	
Ferrocrete per ton extra on above	0 10 0
Super Cement	4 8 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	5 12 0
Sirapite, Coarse	3 9 6
" Finish	3 17 6
Grey Stone Lime	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	2 13 6
Hair	17 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 9½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2 11½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4
Do. do. delivered on road wagons at above stations, per ft. cube	4 5
White basebed, 3d. per ft. cube extra.	

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

HOPTON-WOOD STONE.

Delivered at any Goods Station, London.

Small random blocks, up to 10 ft. cube. Per ft. cube	7/-
Random blocks from 10 ft. and over "	17/-
Sawn two sides "	27/-
Sawn three or four sides "	32/-

YORK STONE, BLUE—*Robin Hood Quality.*

Delivered at any Goods Station London.	s. d.
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	5 3
6 in. rubbed two sides, ditto "	5 9
3 in. sawn two sides slabs (random sizes) "	2 1½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 5½
1½ in. to 2 in. ditto, ditto "	1 3

HARD YORK—

Delivered at any Goods Station London.

Scappled random blocks Per Ft. Cube	5 6
6 in. sawn two sides landing to sizes (under 40 ft. super.) Per Ft. Super	5 4½
6 in. rubbed two sides ditto "	6 0½
4 in. sawn two sides slabs (random sizes) "	2 10
3 in. ditto. ditto "	2 5
2 in. self-faced random flags Per Yard Super	7 11

ARTIFICIAL STONE.

Delivered in London Area in full van loads.	s. d.
Plain per ft. cube	6 6
Moulded " "	7 9
Cills " "	8 3

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£34 0	3 × 6	£25 0
4 × 9	34 0	3 × 11	34 0
4 × 8	29 0	2 × 11	24 0
4 × 7	28 0	3 × 9	33 0
3 × 8	28 10	2½ × 9	33 0
3 × 7	26 0	3 × 4½	24 0
2½ × 7	26 0	3 × 4	24 0

WOOD (*Continued*).

PLANED BOARDS.

1 × 11	£38 10	1 × 9	£36 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅝	21/-	1¼	33/6
¾	23/-	1½	38/6
1	26/6		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.
1	26/6
1¼	33/6
1½	38/6

MATCHINGS (BEST).

Inches	per sq.
¼	17/6
⅜	22/-
½	26/-

BATTENS

Inches	s. d.
¾ × 2	2 4 per 100 ft.

SAWN LATHS.

Per bundle				0	2 10
Dry Wainscot Oak, per ft. super, as inch	0	2 0	to	0	2 6
¼ in. do.	0	1 6	to	0	2 0
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	1 9	to	0	2 6
Cuba Mahogany	0	3 0	to	0	3 6
Teak (Rangoon, Moulmein or Java), per load	45	0 0	to	50	0 0
American Whitewood planks, per ft. cube	0	14 0	to	0	16 0
Best Scotch Glue, per cwt.	4	10 0	to	—	
Liquid Glue, per cwt.	4	7 0	to	5	10 0

SLATES.

1st quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	37 12 6	18 by 10	21 2 6
22 by 12	34 0 0	18 by 9	18 12 6
22 by 11	31 5 0	16 by 10	17 12 6
20 by 12	29 15 0	16 by 8	13 15 0
20 by 10	25 12 6		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	5 7 6
Ditto hand made ditto	5 12 6
Ornamental ditto	5 17 6
Hip and valley tiles (per dozen) { Hand made	0 9 6
Machine made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	13 10 0
Plain Compound Girders	15 10 0
" " Stanchions	17 10 0
In Roof Work	20 10 0

MILD STEEL ROUNDS.

To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
⅛ in.	16 10 0	⅝ in. to ⅞ in.	13 10 0
¼ in.	14 10 0	¾ in. to 2½ in.	13 0 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes.	Fittings.	Flanges.
Gas	52½%	52½%	62½%
Water	47½%	47½%	57½%
Steam	42½%	42½%	52½%
Galv'd—			
Gas	37½%	42½%	52½%
Water	31½%	37½%	47½%
Steam	25 %	32½%	42½%

C.I. HALF-ROUND GUTTERS—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/1½	11d.	3½d.
3½ in.	1/2½	1/0½	3½d.
4 in.	1/4	1/1½	3½d.
4½ in.	1/5½	1/4	4d.
5 in.	1/7½	1/5½	5d.
	O.G. GUTTERS.		
3 in.	1/6½	1/2½	3½d.
3½ in.	1/6½	1/2½	3½d.
4 in.	1/7½	1/4	3½d.
4½ in.	1/9½	1/6½	4d.
5 in.	2/1½	1/9	5d.

RAIN-WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/7½	1/1½	1/8
2½ in. "	1/9½	1/4	2/0½
3 in. "	2/1½	1/8	2/5½
3½ in. "	2/6½	1/11½	2/10½
4 in. "	2/11½	2/4½	3/5½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts plain	3 0½	2 2½	2 8
2½ in. "	3 6½	2 5½	3 3½
3 in. "	4 2½	2 8	4 0½
3½ in. "	4 7	3 3½	4 8½
4 in. "	5 1	3 9½	5 5

L.C.C. COATED DRAIN PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
3 in. per yd. in 9ft. lengths	4 9	5 8	8 10
4 in. " "	6 3	6 8	11 4
5 in. " "	7 6	11 6	18 2
6 in. " "	8 10	14 4	23 5

Per ton in London.

	£ s. d.		£ s. d.
IRON—			
Common Bars	13 10 0	to	14 10 0
Staffordshire Crown Bars—good merchant quality	14 0 0	..	15 0 0
Staffordshire "Marked Bars"	17 0 0	..	18 0 0
Mild Steel Bars	12 10 0	..	13 10 0

METALS (*Continued*).

	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, basis price	13 0 0	..	14 0 0
Hoop iron, basis price	16 10 0	..	17 10 0
" Galvanised	31 0 0	..	32 0 0
Soft Steel Sheets, Black—			
Ordinary sizes to 20 g.	15 0 0	..	16 0 0
" " " 24 g.	16 0 0	..	17 0 0
" " " 26 g.	18 0 0	..	19 0 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	21 10 0	..	22 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	22 10 0	..	23 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	24 10 0	..	26 10 0
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	21 10 0	..	22 10 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	22 0 0	..	23 0 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	24 0 0	..	25 0 0
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	23 10 0	..	24 10 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 10 0	..	26 10 0
Best Soft Steel Sheets, 26 g.	26 0 0	..	27 0 0
Cut Nails, 3in. to 6 in.	20 10 0	..	22 0 0

(under 3in. usual trade extras.)

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/4 to 1/7 per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
LEAD—Sheet, English, 4 lb. and up	42 10 0
Pipe in coils	43 0 0
Soil Pipe	46 0 0
Compo pipe	48 10 0

NOTE—Country delivery, 30s. per ton extra; lots under 3 cwt., 2s. per cwt. extra and over 3cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	29 10 0	..	—
Do., ex country, carriage forward per ton	30 10 0	..	—

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

NEW RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2in.
7/6	11/6	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	50/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1¼ in.	1½ in.	2 in.	3 in.	
8 lbs. P. traps	33/-	41/-	56/-	101/-	per doz.
8 lbs. S. traps	35/-	45/-	66/-	120/-	"

COPPER—	£ s. d.	
Strong Sheet per lb.	0 2 3	.. —
Thin " "	0 2 4	.. —
Copper nails "	0 2 3	.. —
Copper wire "	0 2 4	.. —
TIN—English Ingots "	0 2 6	.. —
SOLDER—Plumbers' "	0 1 1	.. —
Tinmen's "	0 1 3	.. —
Blowpipe "	0 1 5	.. —

PAINTS, &c.

	£ s. d.
Raw Linseed Oil, in pipes per gallon	0 4 0
" " " in barrels "	0 4 2
" " " in drums "	0 4 5
Boiled " " in barrels "	0 4 6
" " " in drums "	0 4 9
Turpentine in barrels "	0 6 11
" in drums (10 gall.) "	0 7 2
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	57 0 0

GENUINE WHITE LEAD PAINT—

"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Special" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered 81 0 0

Red Lead, Dry (packages extra) per ton	44	0
Best Linseed Oil Putty per cwt.	0	16
Filocol per cwt.	0	15 6
Size, XD Quality fkn.	0	3 6

[Concluded on next page.]

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	3½d.	32 oz. fourths	8½d.
15 „ thirds	4½d.	32 „ thirds	10½d.
21 „ fourths	5d.	Obscured Sheet, 15 oz.	4d.
21 „ thirds	6½d.	„ „ 21 „	5½d.
26 „ fourths	6d.	Fluted 15oz. 6½d., 21oz.	9½d.
26 „ thirds	7½d.	En'lled 15oz. 5½d., 21oz.	7½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft
⅛ Rolled plate	4½d.
3/16 Rough rolled	5½d.
¼ Rough rolled	5½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d
Ditto, tinted	9d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

VARNISHES, &c.

		Per gallon £ s. d.
Oak Varnish	Outside	0 14 0
Fine ditto	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best Ditto	ditto	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal Flatting	ditto	1 0 6
Hard Drying Oak	ditto	0 18 0
Fine Hard Drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 12 0
Best Black Japan		0 12 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 9 0
Berlin Black		0 14 0
Knotting (patent)		1 5 6
French and Brush Polish		0 17 0
Liquid Dryers in Terebine		0 9 0
Cuirass Black Enamel		0 7 0

Darvel.—HOUSES.—Various works in connection with erection of houses under their housing scheme. All information from Mr. J. E. Gibson, Town Clerk, Darvel, Scotland.

THE SCOTTISH BUILDER

NEW BUILDINGS IN SCOTLAND.

Glasgow.—CHURCH.—The Corporation has been recommended to offer a site at Mosspark to the Home Mission Committee for the erection of a church.

Hamilton.—HOUSES.—The Scottish B.H. has approved of the erection of 20 houses, which John Dalziel & Sons propose to erect in William-street, Hamilton.

Alexandria.—CHURCH.—The congregation of St. Mary's R.C. Church has bought Ferryfield Works, Alexandria, with ground adjoining, as a site for a church and chapel house.

Crossgates.—INSTITUTE.—The Crossgates War Memorial Committee has arranged to purchase the old school at Crossgates, and the Miners' Welfare Fund has agreed to reconstruct it for a welfare institute.

Edinburgh.—INFIRMARY.—The Royal Infirmary Board proposes to acquire George Watson's Boys' School for the extension of the Infirmary.

Airdrie.—HOUSES.—The T.C. has accepted offers for the erection of 36 new houses in Burnbank-street district. The total cost was stated to be £11,652, the cost per block of four houses £1,294, and the cost per house £323.

Troon.—HOUSES.—The Dean of Guild Court has passed plans as follows:—Mrs. J. Fullarton, 199, Southbrae Drive, Scotstounhill, Glasgow, house in Boagend-road, estimated to cost £1,400; Mr. H. Shaw, builder, East Union-street, houses in Bentinck Drive and Bentinck-crescent, at an estimated cost of £3,000, and a double cottage in Morven Drive, at an estimated cost of £1,500.

St. Vigeans.—CHURCH HALL.—The members of St. Vigeans Church have approved of the erection of a new hall at St. Vigeans, near Arbroath. The plans have been prepared by Mr. Hugh Gavin, architect, Arbroath, and the cost, exclusive of furnishing, is estimated at £1,600.

Roadmeetings.—HOSPITAL.—The Upper Ward District Committee of the Lanarkshire C.C. has agreed to a hospital at Roadmeetings, Carluke, at a cost of £42,000.

Cumnock.—HOUSES.—The T.C. has adopted plans for 24 houses to be built by the Council. The plans were prepared by Mr. W. Cowie, architect, Ayr.

Dunbar.—HOUSES.—The T.C. has received sanction to erect four additional houses.

BYZANTINE ARCHITECTURE.

THE Rev. J. Arnott Hamilton, B.D., Fellow of the Scottish Ecclesiological Society, read a paper recently before the Scottish Ecclesiological Society, at Lansdowne Church Hall, Glasgow. The Rev. A. Boyd Scott, M.C., B.D., presided.

In the course of his paper on "The Origin and Development of Byzantine Architecture," he defined Byzantine architecture as that style which, having evolved during the course of preceding centuries, finally took on its definite characteristics in the days of the Emperor Justinian during the sixth century A.D. Several influences helped to mould it, and these proceeded from diverse quarters, but it was the capital of the Eastern Empire, Constantinople, which organised its distinctive features. Examples of Byzantine architecture were widespread, but a distinction must be made between buildings which were Byzantine in construction and others which were so only in some of their details, their plans being Basilican. The characteristic feature of a Byzantine church was the central dome, covering a square space on the ground floor. It was supported by squinch-arches or by pendentives, the latter being the normal Byzantine method. The dome with pendentives was used largely by the Christian architects of Asia Minor, and that part of the world might be said to be the cradle of Byzantine architecture.

The lecturer traced the development of the Byzantine style in different countries, and the impression, he said, given by the interior of a Byzantine church was one of tranquillity—a profound sense of peace and calm—as contrasted with the feeling of aspiration which attached to Gothic.

Mr. Alexander M'Gibbon, in the course of an appreciation of Mr. Hamilton's paper, mentioned Brixton Parish Church, London, as an interesting example of the Byzantine style in this country.

The Rev. W. Napier Bell, M.A., accorded a vote of thanks to Mr. Hamilton.

Forty Millions for Housing?

Speaking in Glasgow recently, Mr. James Stewart (Under-Secretary of Health for Scotland) said he had used his powers and had informed the Glasgow authorities that they would not be allowed to build houses in excess of 24 to the acre. In the housing schemes which the Glasgow Corporation had in view to make way for slum clearances, they wanted to build 48 to the acre. If the Corporation carried out its threat not to build under the conditions he laid down, the Government would ask Parliament in their new Bill to give them powers to build houses themselves.

When the Labour Party built houses, they would see that the people who built them would occupy them at rents from £14 to £15 per annum. When their whole scheme was completed they anticipated that the State would have to bear a burden of £40,000,000 per annum for housing. That was not much considering they paid more every day in interest on the war debt. The Government also intended to take power to deal with the trusts.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Brick layers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Brick-layers' Labourers.	Plasterers' Labourers.
Aberdeen	1/7½	1/8½	1/7½	1/8	1/7	1/7	1/4½	1/0½	
Airdrie	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Alexandria	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Arbroath	1/7½	1/6½	1/6½	1/7	1/6	1/6	1/5	1/1½	
Ayr	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Bathgate	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/1½ to 1/2½	
Blairgowrie	1/7½	—	1/7½	1/7	1/7	1/7	1/6½	—	
Bo'ness	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Coatbridge	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Dumbarton	1/7½	1/7½	1/7½	1/8	1/7½	1/7½	1/6½	1/2½	
Dumfries	1/5½	1/5½	1/5½	1/6	1/5	1/6	1/5	1/1½ to 1/2½	
Dundee	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Dunfermline	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Edinburgh	1/7½	1/7½	1/7½	1/8	1/8	1/7	1/6½	1/2½	
Falkirk	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Fort William	1/7½	1/6½	1/6½	1/7	1/6	1/6	1/6½	1/2	
Galashiels	1/6½	1/5½	1/5½	1/6	1/5	1/5	1/5½	1/1½	
Glasgow	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Greenock	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/5½	1/1½ to 1/2½	
Hamilton	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Hawick	1/5½	1/5½	1/5½	1/6	1/5	1/5	1/5½	1/2	
Helensburgh	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Inverness	1/4	—	1/3½	1/4	1/4½	1/4	1/3½	10½d to 1/2½	
Kilmarnock	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Kirkcaldy	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Kirkwall	1/7½	1/5½	1/3½	1/4	1/4	1/4	1/4	1/0½	
Lanark	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/5½	1/2½	
Leith	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Motherwell	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Perth	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Stirling	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Stirlingshire (Eastern District)	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	
Wishaw	1/7½	1/7½	1/7½	1/8	1/7	1/7	1/6½	1/2½	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 238.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	6
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	35	0
Add if in underpinning in short lengths	" "	7	6
Add if in floors 6 in. thick	" "	3	6
Add if in beams	" "	4	0
Add if aggregate 1 : 2 : 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	3	3

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	2	0	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—

Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	1
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	4	3
Three-quarter-inch vertical damp course	" "	9	0
½ inch on flats in two thicknesses	" "	6	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	3

MASON.

York stone templates fixed	per foot cube	12	6
York stone sills fixed	" "	21	6
Bath stone and all labour fixed	" "	10	6
Portland stone fixed	" "	19	6

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72 9
Do. 20 in. × 10 in. Do. Do.	"	80 9
Do. 24 in. × 12 in. Do. Do.	"	90 0

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	5	3
Do. joists	" "	5	9
Do. roofs, floors and partitions	" "	6	3
Do. trusses	" "	8	3

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	38/-	44/-	50/-	80/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	" "	50	0
Do. to beams	per ft. sup.	1	0
Centres for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		49/-	58/-	67/-
Do. tongued and grooved	"		54/-	65/-	72/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	4
Deal-cased frames with 1 in inner and outer linings, 1½ in. pulley stiles, tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/8	1/9	2/0
Deal shelves and bearers	"	1/5	1/7	1/10
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	17	0
Plain compound girders	"	20	0
Do. stanchions	"	23	0
In roof work	"	28	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	54	0
Do. Do. in flats	"	52	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	6
Copper nailing	" "	0	6

	½"	¾"	1"	1½"	2"	4"
Drawn lead waste per ft. run	11d.	1/8	1/11	3/5	4/2	
Do. service "	1/7	2/1	2/6	3/10		
Do. soil "						6/10
Bends in lead pipe each					3/3	8/2
Soldered stop ends "	1/2	1/8	2/1	2/10	3/6	
Red lead joints "	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints "	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws "				14/7	19/6	
Bib cocks and joints "	6/4	9/7	15/4	41/-		
Stop cocks and joints "	15/4	17/2	25/8	64/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	3
Do. Do. Sirapite	" "	2	6
Do. Do. Keen's	" "	3	6
Add sawn lathing	" "	1	5
Add metal lathing	" "	2	3
Portland cement screed	" "	1	10
Do. plain face	" "	3	0
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	0	9
26 oz. Do.	" "	1	1
Obscured sheet	" "	1	3
⅛ in. rolled plate	" "	0	9
¼ in. rough rolled or cast plate	" "	0	11
¼ in. wired cast plate	" "	1	5

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece	2/- to 4/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 14 should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

ADWICK-LE-STREET.—For erection of 552 houses, forming a self-contained village around Woodlands, Highfields and Adwick, in conjunction with the Councils and Colliery Companies :—

*Industrial Housing Association.

ALNWICK.—For providing and laying 3,675 yds. of 4 in. cast-iron socket pipes, from Hawkhill to Alnmouth, for the R.D.C. The Surveyor, 24, Fonkle-street, Alnwick:—

D. & T. Crombie & Co., Sunderland	£2,962 2
D. P. Lloyd, Dyffryn	2,527 6
Wm. Auty, Doncaster	2,509 11
Provincial Construction Co., Sunderland	2,014 0
Wm. Thompson, Newcastle-on-Tyne	1,975 0
B. S. Knight, Forest Hall	1,783 16
A. E. Green, Amble	1,549 0
Jas. Wood, Alnwick	1,516 10
*McLaren & Co., Belford	1,495 0

BARNSTAPLE.—For erection of 13 houses on Newport Housing site, for the T.C. Borough Surveyor, The Strand, Barnstaple :—

J. Wakely, Barnstaple	£8,091 0 7
Woolaway & Sons, Barnstaple	6,732 17 0
The Western Builders, Barnstaple	6,390 0 0
Wm. Slee & Sons, Barnstaple	6,359 0 0
*J. Cater & Sons, Barnstaple	6,229 0 0

BATH.—For extending water mains in Newbridge-road and Van Diemen's-lane, for the T.C. :—

*E. Ireland £135 4 7

BATH.—For the erection of 50 houses at Englishcombe Park, for the T.C. :—

*Coles Bros., Ltd., Bath £21,880

BINGLEY.—The U.D.C. has placed the following contracts :—

For paving in Industrial-street—
*T. H. Clark & Sons.
For paving in King's-court—
*J. & W. Potter.

BOSTON.—For erection of houses in semi-detached pairs in various parishes, for the R.D.C. Mr. A. Barton, architect and surveyor, Church-lane, Boston :—

Frampton.	
Handley	£884 0
Langley	827 0
Cruise	804 0
Dawson	790 0
Darby	777 0
Belton	764 10
Greenfield	763 0
*Leafe & Sons	758 0
Kirton.	
Langley	810 0
Cruise	775 0
Favel	773 0
Belton	754 10
*Greenfield	742 0
Algarkirk.	
Hales	844 0
Greenfield	825 0
*Darby & Son	777 0
Cruise	775 0
Fishtoft.	
Greenfield	804 0
Sargent	802 13
*Dawson	790 0
Frieston.	
Handley	884 0
Sargeant	805 13
Greenfield	804 0
Belton	776 10
*Darby & Son	777 0
Fosdyke.	
Hales	844 0
Cruise	794 0
*Leafe & Sons	779 0

BRADFORD.—For erection of new banking premises in Toller-lane, for the Yorkshire Penny Bank, Ltd. :—

*Thomas Obank & Son, Thackley.

BRADFORD.—For erection of an additional story to spinning mill, for Messrs. Sykes & Co., Legram's-lane. Mr. W. E. Bickers, architect, Bank-street, Bradford :—

Mason—
*Wm. Garnett & Co., Thackley.
Steelwork—
*Booth, Bolton.
Roof construction—
*The Kleine Patent Fire Resisting Flooring Co., Ltd., London.

CHELMSFORD.—For the conversion of Rainsford House for Municipal Offices, including alterations, additions, electric lighting and decoration, for the T.C.

F. J. French	£2,083 10
G. J. Hawkes & Sons	1,959 10
*Hy. Potter	1,875 0
W. E. Wisbey (*painting and decorating only*)	248 0

ENFIELD.—For erection of 16 houses in Albany-road, for the U.D.C. The Surveyor, Public Offices, Enfield, Middlesex :—

*Forward & Sons, Dalston.

FORT WILLIAM.—For reconstruction of 6½ miles of roadway between Fort William and Spen Bridge, for the Inverness-shire C.C. Mr. Schoolar, Road Surveyor, Fort William :—

*Kings & Co., Glasgow.

GLOUCESTER.—For the erection of a pair of semi-detached cottages and alterations and additions to the pumping station at Ketford, for the T.C. :—

*W. F. Drew, Ltd. £2,777

HALESWORTH.—For alterations and additions to the Old Boys' School and conversion into children's home, for the Guardians, Blything Union. Mr. A. A. Hipperson, surveyor, Wangford, Lowestoft :—

W. C. Reade, Aldeburgh	£1,200
Smyth Bros., Leiston	1,196
A. Woodyard, Halesworth	1,157
Howard Bros., Halesworth	1,150
*F. E. Wright, Halesworth	1,049

HASTINGS.—For erection of power station buildings, cooling pond, and coal bunkers, &c., for the T.C. :—

*Fairweather & Ranger £27,721 2

HASTINGS.—For erection of women's convenience at Old London-road, for the T.C. :—

*H. & J. Taylor, Hastings £443

ILFRACOMBE.—For construction of concert hall, for the T.C. :—

*Frazzie, Ltd., London £7,950

LEEDS.—For the erection of a new golf pavilion in connection with the Corporation's new course, at Templenewsam. Mr. C. W. Atkinson, architect, 1, Mark-lane, Leeds :—

*H. C. Bridge, Leeds £6,285

LEEDS.—For alterations and extensions at the works of Messrs. H. Boyfields, Blenheim-terrace, Woodhouse-lane. Mr. C. Castelow, architect, Park-row, Leeds :—

*J. Ferguson & Sons, Ltd., St. Columba-street, Leeds.

LICHFIELD.—For the erection of ten houses in Beacon-street, for the T.C. Mr. P. A. Benn, City Surveyor, Guildhall, Lichfield :—

*W. Kendrick & Son, Walsall £4,360

LONDON.—For foundation works in connection with Town Hall extension, for the Wandsworth B.C. :—

*G. E. Everitt & Sons £1,633

LONDON.—For supply of metal shelving for Rotherhithe Library, for the Bermondsey B.C. :—

*Libraco, Ltd. £242 10

LONDON.—For remedying defects to chimneys at houses on Old Oak Estate, for the L.C.C. :—

*A. Fairhead & Sons £393

LONDON.—For structural alterations at Newington Institution, for the Southwark B.G. :—

*Prestige & Co. £38,773

(Accepted in consequence of Castle Bros. having withdrawn their tender.)

LONDON.—For cleaning out ponds, &c., at Telegraph Hill, for the L.C.C. —:

R. Neal & Sons, Wandsworth	£750
Howard Farrow, Golders Green	730
*Mears Bros., Lewisham	593

LONDON.—For supply and erection of close pale oak boundary fencing at Castlewood, for the L.C.C. :—

	Per rod run.
W. Stenning & Son	£5 18 6
J. Stenning & Son, East Grinstead	5 15 6
W. Bowen, Halstead	5 5 6
†B. Horton & Son, Lewisham	5 3 6

LONDON.—For the reconstruction of settling tank at Parliament Hill, for the L.C.C. :—

Mears Brothers	£945
J. & C. Bowyer, Ltd.	880
Howard Farrow	795
J. Garrett & Son	664
*George Bell & Sons, Ltd., Tottenham	561

LONDON.—For laying out and turfing playing field at Beechcroft-road site, Wandsworth, for the L.C.C. :—

J. Cronk & Son, Brixton-hill	£12,821
George Bell & Sons, Ltd., Tottenham	2,992
Howard Farrow, Golders-green-road	2,753
R. Neal & Sons, Wandsworth	2,680
*Mears Bros., Lewisham, S.E.13	2,594

LONDON.—For draining and regulating the Triangle, Kennington Park, for the L.C.C. :—

R. Neal & Sons, Wandsworth	£535
Chittenden & Simmons, Ltd., Maidstone	530
Howard Farrow, Golders Green	497
Mears Bros., Lewisham	447
*George Bell & Sons, Ltd., Tottenham	443

LONDON.—For laying and turfing field on Sutherland-grove School site, for the L.C.C. :—

J. Cronk & Son, Brixton-hill	£2,728
R. Neal & Sons, Wandsworth	2,153
Mears Bros., Lewisham	2,150
George Bell & Sons, Ltd., Tottenham, N.17	1,985
*Howard Farrow, Golders-green-road, N.W.11	1,777

LONDON.—For laying-out ground for games at County Secondary School, Kentish Town, for the L.C.C. :—

R. Neal & Sons	£800
J. & C. Bowyer, Ltd.	675
Hodsons, Ltd.	660
Mears Bros.	612
Howard Farrow	578
*George Bell & Sons, Ltd., Tottenham	393

LONDON.—For the scavenging of Blackwall and Rotherhithe tunnels for a period of 12 months, for the L.C.C. :—

H. Boyer	£1,076 0
J. Hems	809 0
A. Manchester	702 10
Tuff & Hoar, Ltd.	700 0
J. J. Prior	655 0
*J. Calder & Co., Ltd., Cubitt Town, E.14	654 0

LONDON.—For the erection of Tabard House, on the Tabard Garden Estate, for the L.C.C. :—

A. Roberts & Co., Ltd., Earl's Court-road, W.	£20,700
Leslie & Co., Ltd., Kensington	20,694
Rowley Bros., West Green, N.	19,555
*J. E. Billings & Co., Ltd., Westminster	18,977
Albert Monk, Lower Edmonton	18,810
Allen Fairhead & Sons, Ltd., Enfield	18,578

LONDON.—For the extension of women's convenience at Newington Recreation Ground, for the L.C.C. :—

John Garrett & Son	£235 0 0
J. & C. Bowyer, Ltd.	234 0 0
Triggs & Co.	198 0 0
H. King & Sons	191 0 0
W. A. King	189 0 0
John Marsland & Sons, Ltd.	179 10 0
G Parker & Sons, Ltd.	170 0 0
*W. J. Dixon & Son, Southwark	160 15 6

LONDON.—For the supply of kerb for use in connection with paving works in various roads, for the Wandsworth B.C. :—

*Brotherton Ratcliffe & Co., Ltd. (for South Devon Granite Co.)—2,800 lin. ft. 12 in. by 6 in. flat Cornish granite kerb, at 3s. per lin. ft.; also 2,600 lin. ft. 12 in. by 8 in. flat Cornish granite kerb, at 3s. 8d. per lin. ft.
*Wm. Griffiths & Co., Ltd.—2,800 lin. ft. 12 in. by 6 in. flat Cornish granite kerb, at 3s. 5d. per lin. ft.

LONDON.—For the work of renewal and repair of brickwork and stonework at Rotherhithe fire station, for the L.C.C. :—

Edwards Construction Co., Ltd., Eltham	£325 0
Thomas D. Leng, Deptford	315 0
Douglass, Halse & Co., Ltd., Woolwich	312 0
George Parker & Sons, Ltd., Peckham	305 0
Harry Groves & Son, Greenwich	299 10
W. J. Dixon & Son, Bermondsey	282 0
*Ward, Saul & Co., Blackfriars	275 0

LONDON.—For the provision of low-pressure hot-water heating apparatus in connection with the rebuilding of the London-fields School (Hackney, S.), for the L.C.C. :—

The Well Fire & Foundry Co., Ltd.	£2,329
The Thames Bank (Blackfriars) Iron Co., Ltd.	2,165
W. Griffiths, Son & Cromwell, Ltd.	2,140
J. & F. May	2,139
The Hardware Trading Co.	2,090
The Fretwell Heating Co.	2,015
Palowkar & Sons	1,992
Dallow, Lambert & Co., Ltd.	1,777
*Central Heating Co., Ltd, S.E.1	1,375

LONDON.—For the foundation works in connection with the erection of a new elementary school on the Holcroft-road site (Hackney, S.), for the L.C.C :—

G. Godson & Sons, Ltd.	£2,189 0 0
W. Shurmur & Sons, Ltd.	2,119 10 4
Allen Fairhead & Sons	2,077 0 0
W. J. Maddison, Ltd.	2,074 0 0
E. A. Roome & Co., Ltd.	1,996 0 0
Patman & Fotheringham, Ltd.	1,981 0 0
Fred & T. Thorne	1,958 13 0
F. J. Coxhead	1,930 0 0
C. P. Roberts & Co., Ltd.	1,914 0 0
L. H. & R. Roberts	1,852 0 0
A. Monk	1,840 0 0
C. Miskin & Sons, Ltd.	1,813 0 6
*Rowley Bros., West Green, N.15	1,747 0 0

LONDON.—For supply of various machine tools, for the L.C.C. :—

400-ton Wheel Press—	
*Alfred Herbert, Ltd.	£421 4
Tyre-boring Mill—	
*Hulse & Co., Ltd.	321 0
Axle Turning Lathe—	
*Buck & Hickman, Ltd.	272 5
Axle Grinding Machine—	
*Harry F. Atkins (1922), Ltd.	608 0
Radial Drilling Machine—	
*F. Town & Sons	403 0
Commutator Turning and Grinding Lathe—	
*Alfred Herbert, Ltd.	214 10
Side-driven Slotting Machine—	
*Ward, Haggas & Smith	175 0
Power Press—	
*Selson Engineering Co., Ltd.	338 5
Bench Wood-working Tools—	
*A. A. Byrd & Co.	237 0

LONDON.—For the foundation works in connection with the new building of the Wandsworth Technical Institute (Wandsworth, C.), for the L.C.C. :—

Arthur Vigor, Ltd.	£11,014	1	11
G. E. Wallis & Sons, Ltd.	10,227	0	0
F. & T. Thorne	10,168	0	0
W. H. Gaze & Sons, Ltd.	10,117	0	0
C. Miskin & Sons, Ltd.	9,938	0	0
F. & H. F. Higgs, Ltd.	9,897	0	0
Wilson Lovatt & Sons, Ltd.	9,750	0	0
John Garrett & Son	9,557	0	0
Holloway Bros. (London), Ltd.	9,491	0	0
J. & C. Bowyer, Ltd.	9,397	0	0
Prestige & Co., Ltd.	9,320	0	0
L. H. & R. Roberts	9,192	0	0
Holliday & Greenwood, Ltd.	8,995	0	0
*Albert Monk, Lower Edmonton	8,665	0	0

MANCHESTER.—For the erection of Higher Ormond-street School, for the T.C. :—

*Normanton & Son, Manchester	£14,876

MILL HILL.—For erection of 339 houses. Mr. E. Meredith, architect, 7, Goodmayes-road, Goodmayes, Essex :—

Y. J. Lovell & Son, London	£268,550
The Unit Construction Co., London	221,333
F. W. Romain & Sons, Chadwell Heath	212,130
Allen Fairhead & Sons, Enfield	208,668
H. J. Gower, London	205,950
*Urquhart & Anderson, London	204,417

NOTTINGHAM.—For part of the work of widening Trent Bridge, for the T.C. :—

*Cleveland Bridge & Engineering Co., Darlington	£78,709	10	2

OLDHAM.—For the erection of 50 houses on Greenacres site, for the T.C. :—

*J. H. Bardsley, Ltd.	£21,150

OSWESTRY.—For work in connection with Daywall and Hengoed Water Supply, for the R.D.C. :—

David Pugh Lloyd, Merioneth	£3,765	9	3
Martin & Element, Smethwick	3,442	3	6
McAdam & Trainer, Oswestry	3,229	0	6
J. Dickenson & Co. (Bolton), Ltd., Bolton	3,195	0	0
William Auty, Doncaster	3,013	16	9
W. H. Rogers, Willenhall	2,837	7	5
W. Edwards, Shrewsbury	2,756	0	0
Crawford Bros., Havant	2,750	0	0
Hussey, Egan & Pickmere, Birmingham	2,705	12	10
*Andrew Blair, Lyell & Co., Ltd., Birmingham	2,568	6	11
Engineer's Estimate	2,610	1	6

SALFORD.—For construction of railway sidings, weighing machine house, foundations, &c., at Gas Works, for the T.C. :—

*A. Monk & Co.	£3,498 7 11

SALFORD.—For the erection of 36 "A" type flats; 18 "A" type two-story houses; and 8 "B" type two-story houses on the Weaste Housing Estate (Scheme No. 3), for the T.C. :—

†Co-operative Wholesale Society, Manchester	£26,781 3

(Subject to variation in accordance with the rise or fall in the cost of materials or wages.)

STOCKSBRIDGE.—For erection of 20 houses on Shay House-lane site, for the U.D.C. Mr. J. N. Singleton, Surveyor, Stocksbridge :—

For 10 Houses—	
*Mason & Quince, Sheffield	£4,545
*G. L. Bradshaw, Sheffield	4,490
For 20 Houses—	
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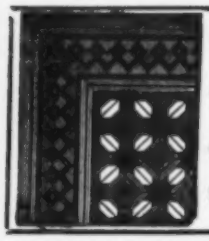

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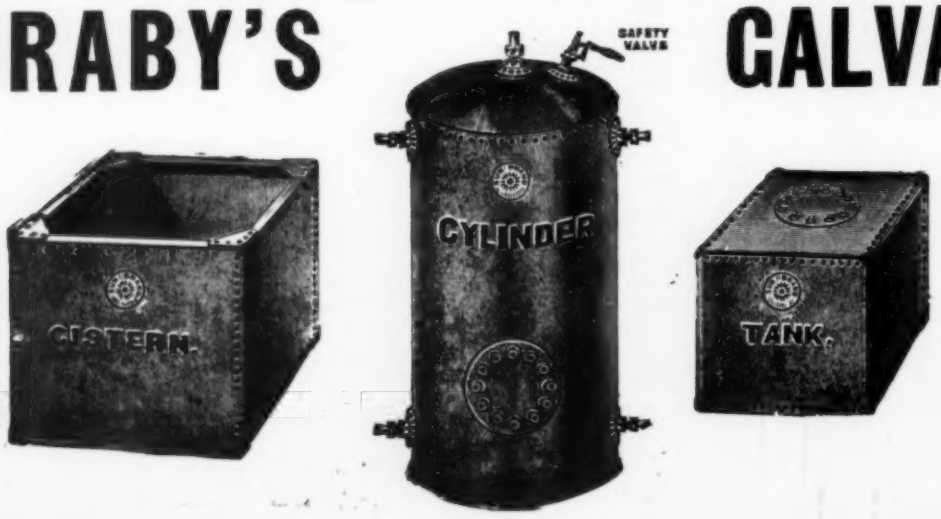

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